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Research Article

Design of Enterprise Financial Management Cloud Platform Based on Neural Network Algorithm

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As the business environment is constantly changing with the ever-changing economic and competitive growth trends, enterprises are more sensitive to market demand. Information management is the first thing that enterprises need to do well in order to effectively and timely communicate with the market, and then determine success or failure. The development and use of enterprise financing system software conform to this trend, which is conducive to implementing information management, and improving management quality and management level. Based on this point, this study designs a set of financial management cloud platform system according to the financial situation of an enterprise in a certain place. According to its business situation and business financial management characteristics, by integrating the neural network principle and Bayesian regularization algorithm, this study puts forward the construction of the Bayesian regularization algorithm based on the neural network model, then analyzes the BP neural network algorithm, evaluates and analyzes the asset management in the process of financial management, and puts forward cloud platform design, system analysis, system framework, etc. The organizational structure and system functions of the platform are introduced in detail for enterprise financial management. Finally, the function and performance of the system are tested in a reasonable testing environment, and the results are empirically analyzed. The test shows that the system is effective in realizing the financial management system, which proves that the financial cloud platform management system developed in this study is suitable for enterprises.

1. Introduction

In today's society, if a country wants to achieve a higher status in the world, it must constantly improve its own management and control ability of informatization, application ability of network, and the level of electronic informatization [1]. Informatization has already penetrated into all aspects of human daily life, and modern equipment can be seen everywhere in our daily life. Computer neural network algorithm technology has been applied in various fields of society [2]. At present, the operating environment of the enterprise is in a dynamic state with market fluctuations and intensified competition, so it puts forward higher requirements for the response accuracy of the enterprise itself [3]. If enterprises want to communicate with the market effectively and timely, they must do a good job in information management. The development and application of financial management software conform to this trend, which is conducive to the implementation of information management and the improvement of management quality and level [4]. The financial management activities of enterprises are becoming more and more complex, and there are still few talents with high management level, which leads to loopholes in the problem handling of enterprises [5]. If an enterprise has insufficient ability to master information when it needs to make major decisions, it will generally lead to wrong decisions and will inevitably suffer heavy losses [6]. Based on the times and technology, this study designs and develops a set of enterprise-oriented financial management cloud platform systems based on the neural network algorithm. The cloud platform design aims to improve the efficiency of financial management business and the

comprehensive delivery of financial management business functions, so as to promote enterprise information innovation and promote the benign development of business. This study first briefly introduces the key technology—neural network algorithm and related concepts, then analyzes the system requirements from the aspects of system operation and performance, and shows the main system function modules such as account book management, report management, voucher management, cashier management, and system settings. Different modules have different functions. Based on this point, the system performance design and technical structure are further improved. After the above optimization, a simulation experiment is designed to test the system function and system performance. The results show that the system can meet the needs of current enterprises for financial management activities, and not only improve the working ability of the accounting department, but also improve the efficiency of financial management. From the perspective of enterprise operation, it is also necessary to improve the management and control of enterprise financial information, reduce the cost of human input, and improve the reform of enterprise information management, so as to lay the foundation for the long-term development of enterprises.

2. Related Work

Cloud computing, as an advanced information technology product in contemporary society, can easily access computing resources such as network, storage, and services by using the network according to actual needs [7]. Therefore, with the help of virtual technology, different computers and their storage resources can be effectively integrated and used. Many developed countries adopt the cloud accounting service model to adapt to SaaS-based services. In other words, service providers provide appropriate software services for the company by connecting to the internet [8, 9]. Because it is connected to the internet, enterprises are no longer affected by geographical factors. Users can use their unique account number, password, and security key to verify the software through mobile devices (such as mobile phones or tablets) to enter or exit accounting information [10]. Even if the enterprise operates the system through software, because all the operation information is not stored on the local hard disk of the computer, but on the cloud disk, the enterprise can use different computers or mobile devices to operate anytime and anywhere [11]. Literature reviews the impact of cloud computing technology on accounting information system elements, including financial operation, financial process, meeting minutes, financial reports, and other elements [12]. Cloud computing can quickly process accounting data, reduce labor costs and calculation errors, and improve data management [13]. The literature has established a technology acceptance model to test the possibility of transforming accounting information systems into cloud accounting information systems, especially in terms of perceived utility, ease of use, and credibility [14]. The literature describes the impact of cloud technology on the business process of accounting information system, and on this basis, it applies accounting information system innovation to improve its accuracy, efficiency, and scalability [15].

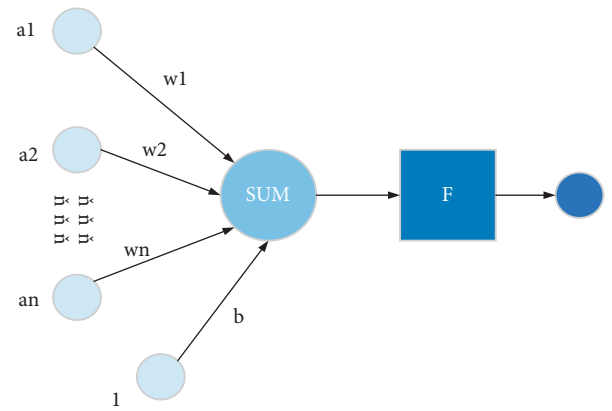

Figure 1: Nodes in artificial neural networks.

3. Theoretical Basis of Neural Network Algorithm and Cloud Platform

3.1. Principle of Neural Network and Bayesian Regularization Algorithm. The algorithm model of the artificial neural network is composed of processing units at different levels of input layer, hidden layer, and output layer, as shown in Figure 1:

The hidden layer and output layer of the artificial neural network are operated according to the numerical calculation rules, and the input layer is solely responsible for processing and receiving the values of variables. In the figure, SUM is an adder, the input of the node is represented by a_i, $i = (1, 2, \ldots, n)$, the weight of the edge connecting the node and the upper node is vector w, and the deviation of the node is b; then, the sum of the jth node can be expressed in the form of the following formula:

$$\mathrm{SUM}_j = \sum_{i=1}^{n} w_{ij} a_i + b_j, \tag{1}$$

where n is the number of top-level nodes; a_i is the output of the ith node at the top level. Because the output of each node at the top level must be used as processing input, there are n input entries, and W_{ij} is the node at the top level. From the definition of the formula, the adder is a linear combination of its own input and a weighted average of its own input. b_j can be considered as a constant term, and its focus can be W_{ij}. In the figure, f is the activation function, and the activation function of node j is as follows:

$$t_j = f\left(\mathrm{SUM}_j\right). \tag{2}$$

For the training samples (x_k, y_k), it is assumed that the output of the neural network is as follows:

$$\hat{y}_k = \left(\hat{y}_1^k, \hat{y}_2^k, \ldots, \hat{y}_l^k\right). \tag{3}$$

So there are the following:

$$\hat{y}_j^k = f\left(\beta_j - \theta_j\right). \tag{4}$$

Therefore, the mean square error of the neural network is shown in the following formula:

$$E_k = \frac{1}{2}\sum_{j=1}^{l}\left(\hat{y}_j^k - y_j^k\right)^2. \tag{5}$$

The BP neural network algorithm is an iterative learning algorithm. In each iteration, the general rules of perceptron learning are used to re-estimate the parameters, that is, as shown in the formula, the parameter V needs to be re-estimated as follows:

$$v \longrightarrow v + \Delta v. \tag{6}$$

Error E_K of formula (5) and given learning rate η are shown in the following formula:

$$\Delta w_{hj} = -\eta \frac{\partial E_k}{\partial w_{hj}}. \tag{7}$$

The right half of formula (7) can be rewritten as formula (8) as follows:

$$\frac{\partial E_k}{\partial w_{hj}} = \frac{\partial E_k}{\partial \hat{y}_j^k} \cdot \frac{\partial \hat{y}_j^k}{\partial \beta_j} \cdot \frac{\partial \beta_j}{\partial w_{hj}}. \tag{8}$$

$\partial\beta_j/\partial w_{hj}$ in formula (8) can just be obtained, as shown in the following formula:

$$\frac{\partial \beta_j}{\partial w_{hj}} = b_h.s \tag{9}$$

The activation function of the neural network has a property, as shown in the following formula:

$$f'(x) = f(x)(1 - f(x)). \tag{10}$$

According to the above formula, there is a formula as follows:

$$\begin{aligned} g_j &= \frac{\partial E_k}{\partial \hat{y}_j^k} \cdot \frac{\partial \hat{y}_j^k}{\partial \beta_j} \\ &= \hat{y}_j^k\left(1 - \hat{y}_j^k\right)\left(y_j^k - \hat{y}_j^k\right). \end{aligned} \tag{11}$$

By substituting it, the formula for re-estimation of parameter w_{hj} in the BP neural network algorithm is obtained, as shown in the following formula:

$$\Delta w_{hj} = \eta g_j b_h. \tag{12}$$

Similarly, the formula can be obtained:

$$\begin{aligned} \Delta\theta_j &= -\eta g_j, \\ \Delta v_{ih} &= \eta e_h x_i, \\ \Delta\gamma_h &= -\eta e_h. \end{aligned} \tag{13}$$

The value of e_h is shown in the following formula:

$$\begin{aligned} e_h &= -\frac{\partial E_k}{\partial b_h} \cdot \frac{\partial b_h}{\partial \alpha_h} \\ &= b_h(1 - b_h)\sum_{j=1}^{l} w_{hj} g_j. \end{aligned} \tag{14}$$

The above are the calculation steps for re-estimating parameters in each step of the BP neural network model. The ultimate goal of the BP neural network algorithm is to reduce the cumulative error of training set D, as shown in the following formula:

$$E = \frac{1}{m}\sum_{k=1}^{m} E_k. \tag{15}$$

3.2. Application of Bayesian Regularization in Neural Network Model Construction. There are two main factors that affect the generalization ability of the BP neural network algorithm model, namely, the structure of the network and the characteristics of the training samples. In this study, regularization is used to optimize the network structure. The standard BP neural network uses the mean square error as the performance function, and regularization improves the generalization ability of the BP neural network by changing the performance function.

For training samples $d = (x_i, t_i)$, $i = 1, 2, \ldots, N$, N is the total number of samples. If W is known to be the parameter vector of the neural network and the structural network is h, the error function e_d of the network is given by the following formula:

$$E_D = \frac{1}{2}\sum_{i=1}^{N}\sum_{k=1}^{K}\left(f\left(x_i, W, H\right) - t_i\right)^2, \tag{16}$$

The purpose of network learning is to find the value of the reduced E_d error function in the network parameter vector W, and there are infinite values of the reduced objective function. Therefore, the regularization method can be used to solve this kind of problem. Increasing the weight of the error function decomposition function is a common regularization method, as shown in the following figure:

$$\begin{aligned} E_W &= \frac{1}{2}\|W\|^2 \\ &= \frac{1}{2}\sum_{m=1}^{M} w_m^2. \end{aligned} \tag{17}$$

The total number of network parameters in formula (19) is M, so the objective function strain is as follows:

$$F(W) = \beta E_D + \alpha E_W. \tag{18}$$

In formula (18) α, β controls the weight distribution and threshold form, and it is a superparameter.

By using the new performance index function, the regularization method can make the actual value error of network training as low as possible and ensure that the

effective value is as small as possible, which is actually equivalent to automatically reducing the size of the network.

It can be seen that the minimization of the objective function is necessary to determine the size of the hyperparametersα and β, while the conventional regularization method is difficult to determine. Therefore, this study uses the Bayesian algorithm to determine the superparameters, which can be automatically determined in the process of network formation. We resize and optimize the superparameter. In the Bayesian algorithm theory, network parameters are considered as random variables. If samples are provided, the distribution function is as follows:

$$P(W|D,\alpha,\beta,H)=\frac{P(D|W,\beta,H)P(W|\alpha,H)}{P(D|\alpha,\beta,H)}. \tag{19}$$

The prior distribution is the prior value of the weight vector parameter W without samples, so the distribution is a very wide distribution. Once the data are available, they can be transformed into a posterior distribution. Therefore, prior density $p(w|a,H)$ and likelihood function $p(D|W,P,H)$ must be known.

Let the general distribution of the training set and the prior distribution of the weight parameters be the normal distribution, and give the following formula:

$$P(D|W,\beta,H)=\frac{1}{Z_D(\beta)}\exp\left(-\beta E_D\right), \tag{20}$$

$$P(W|\alpha,H)=\frac{1}{Z_W(\alpha)}\exp\left(-\alpha E_W\right). \tag{21}$$

In formulas (20) and (21),

$$\begin{aligned} Z_D(\beta)&=\int_{-\infty}^{+\infty}\exp\left(-\beta E_D\right)\mathrm{d}D\\ &=\left(\frac{2\pi}{\beta}\right)^{(N/2)},Z_W(\alpha)\\ &=\int_{-\infty}^{+\infty}\exp\left(-\alpha E_W\right)\mathrm{d}W\\ &=\left(\frac{2\pi}{\alpha}\right)^{(M/2)}. \end{aligned} \tag{22}$$

By substituting formula (23) and formula (24) into formula (22), the following formula will be obtained as follows:

$$P(W|D,\alpha,\beta,H)=\frac{1}{Z_F(\alpha,\beta)}\exp\left(-F(W)\right). \tag{23}$$

Therefore, when maximizing a posteriori probability$p(w|D,\alpha,\beta,H)$, the optimal weight parameter is obtained, which is equivalent to minimizing the total error function. Let us continue to optimize the superparameters α and β. The posterior distribution is as follows:

$$P(\alpha,\beta|D,H)=\frac{P(D|\alpha,\beta,H)P(\alpha,\beta|H)}{P(D|H)}. \tag{24}$$

If the prior distribution$P(\alpha,\beta|H)$ is uniformly distributed, and β is not directly related to $P(d|h)$, then the posteriori probability of the maximization problem $p(w|d,\alpha,\beta,H)$ is equivalent to finding the maximum likelihood function $p(D|\alpha,\beta,H)$. Therefore, the following formula is obtained by sorting and calculating the formula:

$$P(D|\alpha,\beta,H)=\frac{Z_F(\alpha,\beta)}{Z_W(\alpha)Z_D(\beta)}. \tag{25}$$

3.3. Cloud Platform Principle. Cloud services are also divided into infrastructure as a service (IaaS)/platform as a service (PaaS)/software as a service (SaaS). The description is as follows.

3.3.1. IaaS. For example, Amazon provides EC2 and S3, including virtual computing environment and cloud storage. In addition, Microsoft's Windows Azure will also enter this field. Shanda cloud is typical in China, and there are cloud bases for cooperation projects established by other manufacturers, but most of them are in the early testing stage. Influenced by cloud computing, IaaS is turning to low-level services such as the web.

3.3.2. PaaS. For example, Google allows users to deploy applications on the platform it provides or create new applications using the services it provides, such as salesforce.com and vmforce.com, cloudfoundry.com, and Microsoft Windows azure. Typical platforms in China include Sina, Baidu, and other application engines. Developers can deploy applications or write applications through open service interfaces.

3.3.3. SaaS. Users can obtain online CRM on the web without buying servers and installing software. SaaS, including Oracle CRM on demand, Microsoft Windows Live, Google Docs, and IBM LotusLive, is different in that it provides a variety of online applications, and all of them focus on one area and cannot cover all areas. In addition to the public cloud, other providers provide platforms to help users create services, including Oracle.

4. Cloud Platform Design for Enterprise Financial Management

4.1. System Requirement Analysis. In addition to the functional principle of system design, the financial management system should also start from the whole system, divide the design of nonfunctional requirements into several small steps, and design them step by step. A certain margin must be left in the design to prevent future system expansion.

4.1.1. Overall System Performance. In terms of response time, the response time from receiving the request to the system shall not exceed 2 seconds and in combination with the complex operation of the database shall not exceed 4 seconds, so as to prevent animation pause and bring obstacles to the user experience.

4.1.2. High System Reliability. The reliability of the system also has specific requirements. The financial activities of the enterprise will not be intermittent. In this sense, the financial management system must operate continuously. In a real sense, it can operate continuously for a long time without failure. During the service period of the system, the system shall operate 7×24 smoothly.

4.1.3. Security and Confidentiality Mechanisms. For enterprises, financial information is related to business income and expenses. The data itself need to be safely transmitted. If the information is illegally stolen and abused, it may have a huge impact on the whole enterprise. Therefore, in the design, it is necessary to assign reasonable permissions to different users, set the firewall security for the key of the host fortress to avoid data loss, set the closing time of the login user, etc.

4.1.4. Fault Tolerance. The financial management system often encounters some unexpected errors or other unforeseen events during its operation. The system needs to have good fault tolerance to solve these common errors and must have a certain degree of fault tolerance. Careful strategic preparation is required during design to ensure that the basic financial data of the management system will not be lost or damaged no matter what happens.

4.1.5. Openness. Because it is a system designed and developed by Java, the feature of Java is to compile and execute everywhere, which is conducive to porting code.

4.2. System Architecture Design. The content of this function part is composed of the financial management module and the control system, which can not only meet the business processing needs of the financial personnel, but also do not need to deal with the account setting problem, and can transfer the data to the processed account. In addition to handling encryption and optimizing the programs created by the system to ensure utilization, it also improves the security and solution efficiency of the cloud platform. Building a cloud platform requires a lot of money and has a high standard and starting point of technical strength. Due to the lack of funds and weak technical force in the initial stage of business, the use of third-party cloud technology can solve these problems. The development of the system has the concept of hierarchy. The hierarchical development of the system makes the whole system easier to understand and maintain. The system adopts the MVC standard, which is compatible with the model and the view of the controller. The object data model represented by the model layer is marked. The main object model of the system is the financial data of the enterprise. The view layer is usually the interface that the user sees. The controller layer mainly completes the embodiment of business logic and converts data into perspective. The overall design of the system framework is shown in Figure 2.

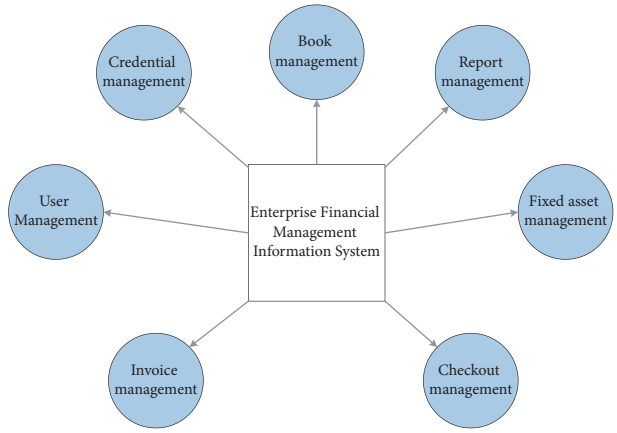

Figure 2: Overall system framework design.

4.3. System Function Analysis. In order to survive in the complex and changeable market environment and even achieve long-term growth, enterprises must improve their competitiveness, make full use of their funds, and carry out comprehensive management of the whole production and operation process. The financial management system is used to properly analyze the company's financial situation through the evaluation of the company's financial situation, so as to help managers master correct data and promote the long-term growth of the whole business when the company must make decisions. This chapter takes the relevant situation of the financial management information system of an enterprise in a province as an example, analyzes the importance of the financial management system to the enterprise, and provides a template for the future system construction. Enterprise financial management system is the most common type of information management system. It achieves the purpose of information management by querying, updating, and managing all kinds of enterprise financial information. We use the management system to accurately manage the overall financial situation of the enterprise, so as to make the financial situation of the enterprise more reasonable, improve efficiency, and promote the overall interests. The financial management system must have the following functions.

4.3.1. Voucher Management. Accounting vouchers are the basis of the whole industry and the source of all accounts in the financial management system. These vouchers must be strictly prepared before they can be entered into the system and become useful references. The accuracy of the certification system is important. The voucher management function also has several business-specific requirements, as shown below:

(1) Material Demand Document Management. This function can be designed according to your own needs and actual conditions. For example, in terms of permission use, it can be divided into material managers in the construction department and asset managers in other departments. The material manager of the construction department can apply

to the superior leaders for purchasing materials, and the property manager of other departments can apply for office supplies, etc.

(2) Market Sales Voucher Management. This function is mainly used by the personnel of the enterprise marketing department to view and update product-specific information at any time. Nonmarketing personnel can only view relevant product information and cannot modify it through the system.

4.3.2. Account Book Management. In the whole process of enterprise financial management, an account book is a very important part. It is based on enterprise vouchers. By recording the amount of each business, a continuous and complete financial accounting can be implemented. With the passage of time, the total revenue and capital cost can be used to understand whether the company's production and operation are profitable or loss.

4.3.3. Report Management. The report can show the working status of the department and find the reasons for the changes in the financial status of the enterprise. The financial statements make use of specific data analysis and processing technical support to master the overall status of production and operation in one step and provide support for the final decision-making of managers. Financial information report analysis plays a decisive role in improving work efficiency and helping enterprises make decisions to change enterprise management, especially financial management.

4.3.4. Fixed Asset Management. This function is to enter the serial number, name, price, and other information of fixed assets into the entire information system. Enterprise managers can call the information of any product at any time.

4.3.5. Closing Management. Before each enterprise settlement, the financial personnel shall carefully check each account to make it consistent with the actual situation, understand the accounts that have not been paid on time, and notify the relevant personnel of the owner to pay on time to avoid business losses. Payment procedures can only be performed after the account has been verified. We record the amount and balance of the current period in the general ledger and subledger accounts, and keep the records of the next period.

4.3.6. Invoice Management. Online invoice management is an important evidence for tax inspection and management. Therefore, enterprises need to pay attention to invoice management.

4.3.7. User Management. The administrator can adjust the account attributes and permissions to perform comprehensive management operations and assign permissions to the account.

4.4. Cloud Platform Organization Structure. With the progress of cloud computing technology, the organizational structure of the financial sharing center has gradually evolved into two parts, the cloud and the client, and each includes different levels, as shown in Figure 3.

The cloud computing server consists of four layers: the network service level provides customers with e-mail, web address, authentication, and other services; the data management layer divides the data into four categories: metadata, basic data, business data, and decision data, which are stored according to the data category; the application support layer is the shared enterprise financial data center, which provides statistical analysis, website management, authority management, and other support; and the application layer is mainly responsible for payment management, centralized bookkeeping management, centralized payment management, and impact management.

5. Enterprise Financial Management Cloud Platform Test

5.1. Test Environment

5.1.1. Test Objectives

(1) The risk factors are summarized that can be avoided during the test.

(2) Software testing shall be simultaneously conducted during software development to reduce the possibility of risk. Tests are conducted to reduce the risk of discovery.

(3) The end time of the test is specified.

(4) System testing is considered as part of system development.

5.1.2. System Test. Even though the test is conducted on the Microsoft operating system, the specific test environment is amp. The test computer must meet the following configuration requirements:

Processor: Intel Pentium Dual Core 3.5 GHz or above; memory capacity: 8 GB and above; hard disk capacity: 500 GB and above; and cache capacity: 512 MB and more. In addition, the software can run on different versions of Microsoft operating systems.

5.1.3. Test and Analysis of Key Parts of the System. The test includes the following two aspects: part I: test the system connection function. Users can log in to the system normally, but the interface with the system is not beautiful enough, which is far from the expected design requirements; part II: test the functional modules in the system. This test focuses on the functional units in the background of the system, because they are an important part of the system. From the test results, all functional modules of the system work normally and meet the expected performance requirements.

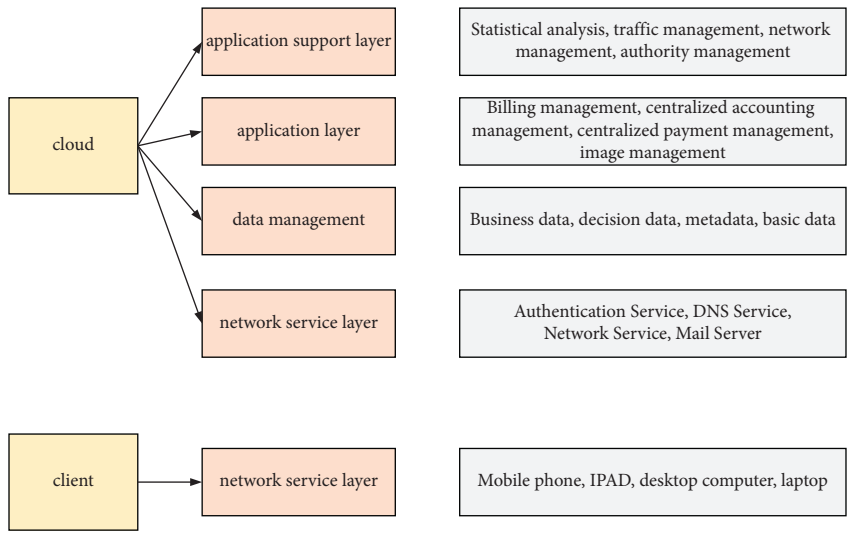

Figure 3: Organization chart of financial sharing center based on cloud computing.

Table 1: Login function test cases.

Test number	Test001	
Example description	Whether the user can log in to the system smoothly	
Test premise	Legal user of the system (administrator), user account "010024," login password "1111111111"	
Test input content	Expected outcome	Actual results
Only fill in the account "010024," the password "1111111111" is only filled in the account "010024," not input the password	Unable to login	Unable to log in, the system prompts "Please enter the password"
Only fill in the account "010024," password "1111111111"	Unable to login	Unable to log in, the system prompts "Please enter the verification code"
Fill in the account "010024," password "0000000000"	Unable to login	Cannot log in, the system prompts "Please enter the correct password"
Fill in the account, password, and verification code correctly, and select the "ordinary member" port login	Unable to login	Cannot log in, the system shows "Identity verification failed, please log in again"
Fill in the account, password, and verification code correctly, and select the "Senior Member" port login	Unable to login	Login successful

5.2. System Function Test Results. According to the results of the content and method analysis of the above system test, this study has carried out a functional test of the accounting information management system. This section presents the test results in the form of functional test cases, as shown in Tables 1 and 2.

5.2.1. User Authentication Attempt. In order to simulate different connection scenarios, the user must correctly enter the account number, password, and verification code during the connection process before connecting from the correct port. For the login test, the example is shown in Table 1.

Table 2: System setting use cases.

Test number	Test004	
Example description	This stage tests the setting operation effectiveness of user settings, parameter settings, and other personalized settings	
Test premise	User successfully logged in	
Input item	Expected outcome	Actual results
Select user settings and click "Modify password"	Plug the password modification interface	Successfully pop up the password modification interface
Select user settings and click "Different account"	Login the current account	Login the current account and move to the system login interface further
Perform personalized settings, modify the color of the interface font, and click "Return"	Fail to edit	Personalized display modification failed, the system prompts "You have not preserved the revision, are you sure you want to give up?"
Select the parameter settings, modify the type of judgment conditions for sales customers, and then click "Confirm the modification"	Successfully modified	The data are successfully modified, and the system prompts that "The condition of customer type judgment has been successfully changed"

Table 3: System pressure test.

Number of concurrent users	Average response time of query data (seconds)	Save data average response time (seconds)	Data executed per second		
			Minimum value	Maximum	Average value
30	1.2	1.3	31	51	45.71
70	1.7	1.8	46	69	60.72
120	2.2	2.6	66	81	76.08
200	2.8	3.1	76	94	90.25
290	3.5	3.7	90	107	101.12
350	3.9	4.6	99	121	103.39
480	4.3	5.1	105	138	104.55

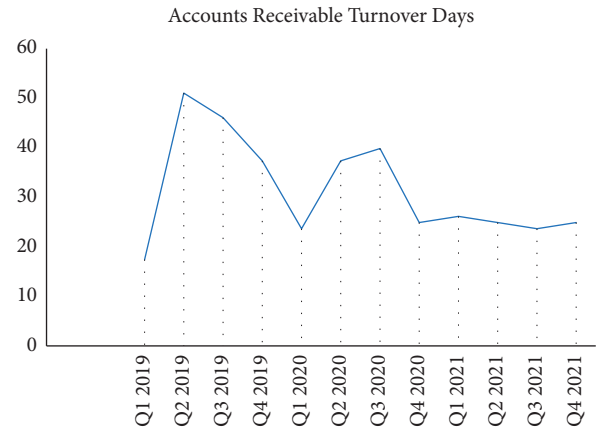

Figure 4: Quarterly turnover days of accounts receivable from 2019 to 2021.

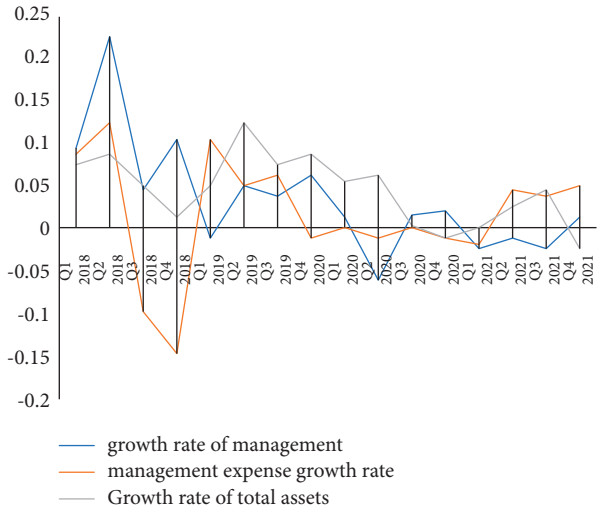

Figure 5: Growth rate of management personnel, management expenses, and total assets in the 2018–2021 quarter.

5.2.2. System Setting Test. It specifically includes whether the user settings, parameter settings, and other personalized settings can be set for the specified items, and whether the modifications can be saved or discarded. The test cases of system settings are shown in Table 2.

5.3. System Performance Test Results. We test the system performance as described above. We test whether the system performance based on a high-strength access environment meets the expected design response goals, such as operation response time, system pressure resistance, etc. According to the analysis results of system performance requirements, the accounting information management system must meet the following requirements: under different concurrent pressures of users, the response time shall not be less than 5S. The main contents of performance test include selecting test tools and writing test scripts. Some results of the system performance test are shown in Table 3.

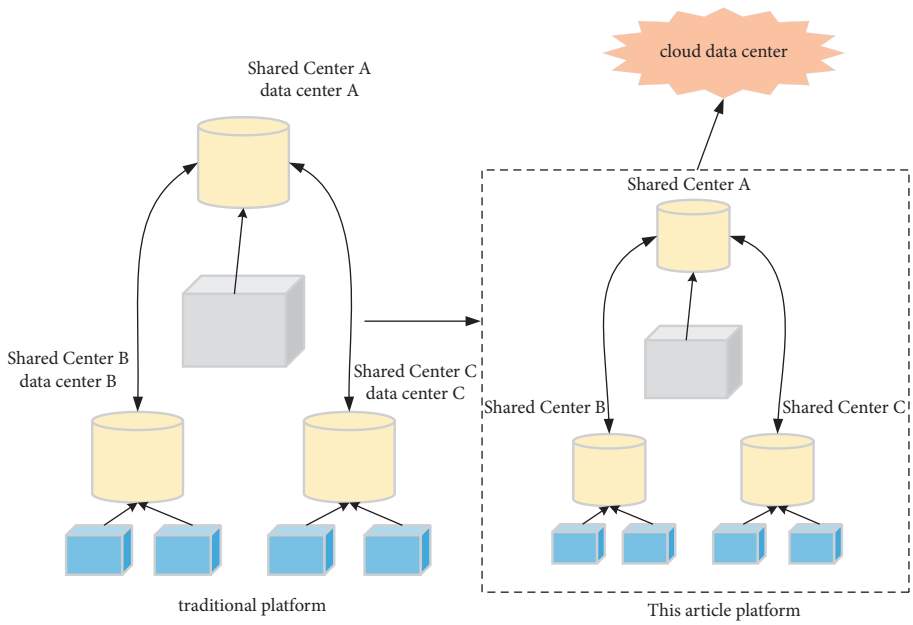

Figure 6: Differences between enterprise financial management cloud platform and traditional enterprise financial management system.

It can be seen from the data in Table 3 that if the system is in the state of 480 concurrent users, the average response time of data query is 4.3, the response time of data access is 5.1, and the average execution data size per second is 104.55. Therefore, it can be seen that the performance test results have achieved the expected goals and are suitable for the business accounting needs of enterprises of different sizes.

5.4. Empirical Analysis. The above figure shows the quarterly accounts receivable turnover days of a company from 2019 to 2021. From the analysis in Figure 4, it can be seen that a company uses this platform for centralized control of funds, replacing the previous phenomenon of "everyone is responsible and ineffective." Through process reorganization, optimization, and improvement of the information system, we improve the control over the financial nodes of the enterprise process, so as to improve the company's risk control ability and reduce the company's overall financial risk.

In order to more intuitively express the change in the company's management cost, the management cost of the calendar quarter from 2018 to 2021 is presented in the form of a line chart, as shown in Figure 5. The figure shows that since a company has established a financial sharing center, the fluctuation of its management growth rate has decreased. Since the fourth quarter of 2018, the company's management growth rate and management cost have been lower than the growth rate of the company's total assets.

5.5. Advantages of Cloud Platform for Enterprise Financial Management. The financial sharing center uses mobile internet technology and cloud computing technology to provide customers with "5A" services, that is, any customer (any), anytime (anytime), anywhere (Anywhere), any financial information (any), and any device (any device). Even if customers do not know the location of the financial sharing center and the business processing process on the new cloud business management platform, they can start the mobile terminal application as needed. The financial sharing center provides customers with the required services and information according to the application content. Therefore, in the cloud context, financial sharing services for enterprises can be more "cloud."

The new cloud business management platform is the product of financial sharing services. The new enterprise cloud management platform integrates the business sharing financial service platform with the enterprise information system, making it one of the components of the enterprise information system. Through the cloud platform, the ERP system and financial sharing center of each branch are migrated to the cloud to share information between companies. The difference between the traditional business management system and the new cloud business management platform in system construction is shown in Figure 6:

6. Conclusions

The financial management system can integrate the actual financial management needs of enterprises to achieve efficient financial management. The financial management system has the characteristics of information planning, information control, and information consistency. It plays an irreplaceable role in the financial operation and financial management. Nowadays, many enterprises adopt modern financial management system, and only a few small and microenterprises or private enterprises adopt manual management mode. The traditional manual financial management method has a large workload and low efficiency in retrieving data records, so it cannot provide statistics, analysis, and other functions for financial management. This

study designs a kind of enterprise financial management cloud platform. The system mainly adopts the neural network algorithm technology. From the test results, the system basically meets the business requirements. After a comprehensive and scientific test, it can be seen that the function and performance of the system can be fully operated, realizing the combination of management technology, information technology, and new business management concepts, helping enterprises develop healthily and improve competitiveness.

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 conflicts of interest.

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