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Network Accounting Mode Management in Multimedia Environment on Account of Embedded Microprocessor

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Abstract: Due to the huge user base, highly flexible technical performance and network characteristics of the Internet, the Internet has become an ideal business platform and has formed a global network economy. In the current multimedia environment, some new economic forms such as virtual enterprises have emerged. These companies have no real office space. The prosperity of Internet and information technology has broken the previous business model and accounting model, and the network accounting model came into being. The emergence of a new industry will certainly be accompanied by many problems. For example, information management is difficult, information security is not high, and theoretical development is immature. Therefore, the management of network accounting has become an important topic. Embedded microprocessors are more and more widely used in various electronic devices due to their high performance, low power consumption, and portability. This article will study the mode management of network accounting based on embedded microprocessor. This article introduces the methods of network accounting and embedded microprocessors. A network system was designed based on an embedded microprocessor. This article tested the system and got the result: the average accuracy of the system's forecast of operating income is about 94%, and the average accuracy of forecast of operating costs is 93%. The network accounting system's forecast accuracy rate for sales expenses is 90%, and the forecast accuracy rate for management expenses is 92%. The average processing capacity of the system is 13.9time/s. The average value of the maximum server occupancy rate under different threads is 49.83%.

1. Introduction

1.1. Background

In the past accounting model, due to the use of information and network technology, the

traditional accounting model was unable to efficiently process financial information, resulting in the isolation of accounting information and unable to meet the needs of accounting information users. The emergence of network accounting has adapted to this new Internet economic environment and has gradually developed. Especially due to the vigorous development of e-commerce in today's multimedia environment, it has promoted the prosperity of the network accounting industry.E-commerce includes not only transactions between enterprises conducted on the Internet, but also internal activities of companies such as transportation, finance and management and business activities among enterprises. Because all transactions of e-commerce are carried out on the network, and the transaction contents are cumbersome and diverse, the rapid development of e-commerce means higher requirements for the accounting model, which makes people have to strengthen the construction of the network accounting model management.

1.2. Significance

Network accounting is an accounting activity based on the confirmation, measurement and reporting of various business and affairs. At the same time, it is an accounting information system based on the network environment and an important part of e-commerce. The advancement and application of the network accounting information system, on the one hand, can liberate accountants from complex affairs and perform more management work; On the other hand, network accounting information system has the characteristics of comprehensive and timely information, and it can obtain valuable information and present it to users through analysis, screening and calculation, so as to provide decision-making support information for operators. Taking network accounting as the research object, analyze the characteristics of network accounting and the necessity of its development. Adjusting the relationship between network accounting and traditional accounting, combined with the current development of Chinses network accounting. Conducting detailed analysis of the common points and characteristics of current network accounting development. Putting forward valuable suggestions on the network accounting model. All this is conducive to the development of my country's Internet economy, and can even promote the stable development of virtual enterprises.

1.3. Related Work

With the advent of the Internet age, the industry of network accounting has developed rapidly, and many scholars have studied it. By analyzing the research that combines the viewpoints of Institutional Theory and Actor Network Theory, Modell S explores the possibility and challenges of combining methodological theory in accounting research. He also called on accounting researchers to combine method theory [1]. Zhang X uses neural network to encrypt and decrypt sensitive corporate accounting information to generate data. He categorizes authorized and unauthorized persons in corporate accounting information. When an authorized user accesses company account information, it generates confidential key processes. The algorithm does not allow unauthorized persons to access information for theft. But the disadvantage is that the algorithm is more complicated and not very practical [2]. Murro E investigated the structure of the network of human. Based on this research, he concluded that establishing a network in the field of professional accounting inspection depends on a large number of translations between agents. Because these translations have an impact on the execution of activities and the stability of relations [3]. The purpose of Rutherford BA is to analyze accounting research projects related to the ambiguity of accounting narratives, focusing on the early literature on the readability of accounting narratives. He translated the concept of readability from the perspective of educational psychology. He used the actor network theory to specifically examine whether a network needs to accommodate the

interests of actors and the resulting risk of failure. The analysis of the survey results showed that the project failed because the network seeking to support it failed. It failed because it could not fully adapt to the interests of its members, and the study lacked practical data support [4]. Laine T analyzed the basic ideas of consolidated financial statements to determine its applicability to network profitability management. The concept of integrated network is proposed on the basis of conceptual analysis. This conceptual analysis is derived from research activities in a network of two companies. Although there are many obstacles hindering the adoption of merged networks, the idea of merging business views has received a lot of positive feedback [5]. Accounting rules and practices have become an important part of sustainable governance, especially in the areas of corporate environmental, social and governance reporting. Thistlethwaite J analyzed the emergence and characteristics of private governance plans related to sustainability accounting. He uses social network analysis to do so in order to be able to conceptualize the connection patterns between these different plans, and thus to recognize authority through theoretical expertise. He contributed to the theoretical understanding of three specific ways of these plans: namely, neoliberal governance of privatization, and the concept of governance through experiments and experiments. However, the study lacks some detailed design [6].

1.4. Innovation

The innovation of this article is (1) The embedded microprocessor is applied to the construction of network accounting platform, and the related methods of embedded microprocessor and network accounting are introduced. (2) A network accounting system is designed based on embedded microprocessor. The system not only has functions of accounting and general finance, but also has the function of forecasting financial situation on account of big data, and this article also proves the good performance of the system through experiments.

2. Network Accounting Mode Management Method Based on Embedded Microprocessor

2.1. Automatic Accounting Confirmation Method in View of BP Neural Network

Artificial neural network has gone through a long period of development and gradually formed a relatively complete discipline system. Research scholars combine artificial neural network theory with many subject theories and successfully apply it to other subject fields.It has been successfully applied to other disciplines, such as computer vision, speech recognition, machine translation, social network filtering, playing chessboard, electronic games and medical diagnosis. Network accounting is an emerging industry in the development of the Internet, and its mode management is an important issue to be solved. Here, combined with artificial neural network, we study the automatic accounting confirmation method in network accounting [7].

(1) BP artificial neural network structure

The structure of BP neural network is forward layering, which is divided into three layers, namely input, implicit, and output layer. Neuron nodes are always connected to nodes of other layers and not to the same layer. The hidden layer of the BP network can have one or more layers. The schematic diagram of BP artificial neural network is shown in Figure 1:

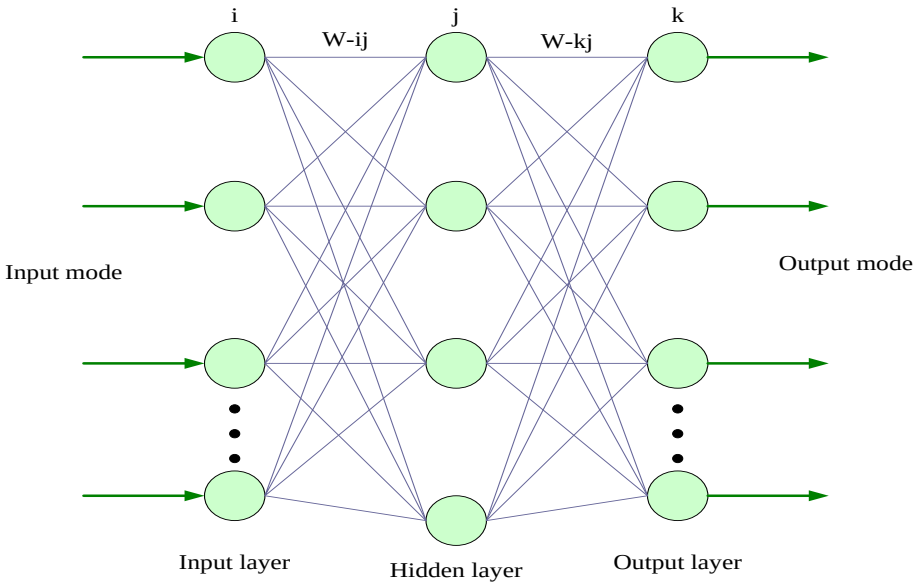

Figure 1. BP network structure diagram

If the input layer of the neural network is stimulated by the external environment (such as economic business data to be processed), each input layer transmits the stimulus signal to the hidden layer [8]. There is an input mode Xpi, and each input of the hidden layer can be expressed as:

$$I_{pi} = \sum_i W_{ji} O_{pi} \tag{1}$$

W_{ji} is the weight coefficient of node i and node j, and O_{pi} is the output vector value of node i. If the threshold of node j is θ_j and the activation function is Sigmoid, now let:

$$A = I_{pj} - \theta_j \tag{2}$$

Then the output value of node j is:

$$O_{pj} = \frac{1}{1+e-A} \tag{3}$$

The output of the artificial neural network produces the final output vector, and the input value of the k node of the output layer is:

$$O_{pk} = \frac{1}{1+e-A} \tag{4}$$

W_{jk} is the weight of output layer node k and hidden layer node j, and O_{pj} is the output vector value of node j. If the threshold of node k in the output layer is θ_k, and the transfer function between the hidden layer and the output layer is Sigmoid, let:

$$B = I_{pk} - \theta_k \tag{5}$$

Then the output vector value of node k is [9]:

$$O_{pk} = \frac{1}{1+e-B} \tag{6}$$

(2) Calculation steps of BP algorithm

The learning algorithm of BP neural network can be summarized as follows:

1) Input training samples, (X_m,Y_m), m=1,2,3...,n.

2) Establish the network model structure.
3) Enter the network model parameters such as learning rate and allowable error.
4) Take the m-th training sample (X_m, Y_m), where:

$$X_m = (x_{1m}, x_{2m}, \ldots, x_{nm}) \quad (7)$$

$$Y_m = (y_{1m}, y_{2m}, \ldots, y_{nm}) \quad (8)$$

5) The forward propagation calculation starts from X_m. The output of each node in the input layer is calculated as:

$$O_{jm}{}^{k} = f(x_{jm}), j=1,2,...,n \quad (9)$$

6) Calculate the input and output of each node layer by layer as [10]:

$$I_{jm}{}^{k} = \sum_{i=1}^{n(k-!)} w_{ij}{}^{(k-1)} O_{im}{}^{k-1} \quad (10)$$

$$O_{jm}{}^{k} = f(I_{jk}{}^{k}) \quad k=2,3,...,K \quad j=1,2...,n \quad (11)$$

$I_{jm}{}^{k}$ is the input, $O_{jm}{}^{k}$ is the output and $w_{ij}{}^{(k-1)}$ is the weight. The input formula is a continuous summation process.

7) Error back propagation calculation

(3) Automated accounting confirmation process based on BP artificial neural network

After the standardized processing of Internet economic business activity data, the accounting information system will automatically collect relevant agreements and save them in the system event database. According to relevant information, the computer automatic accounting confirmation platform will hand over these standardized data to make accounting information [11]. The process of confirming accounting elements based on BP artificial neural network is shown in Figure 2:

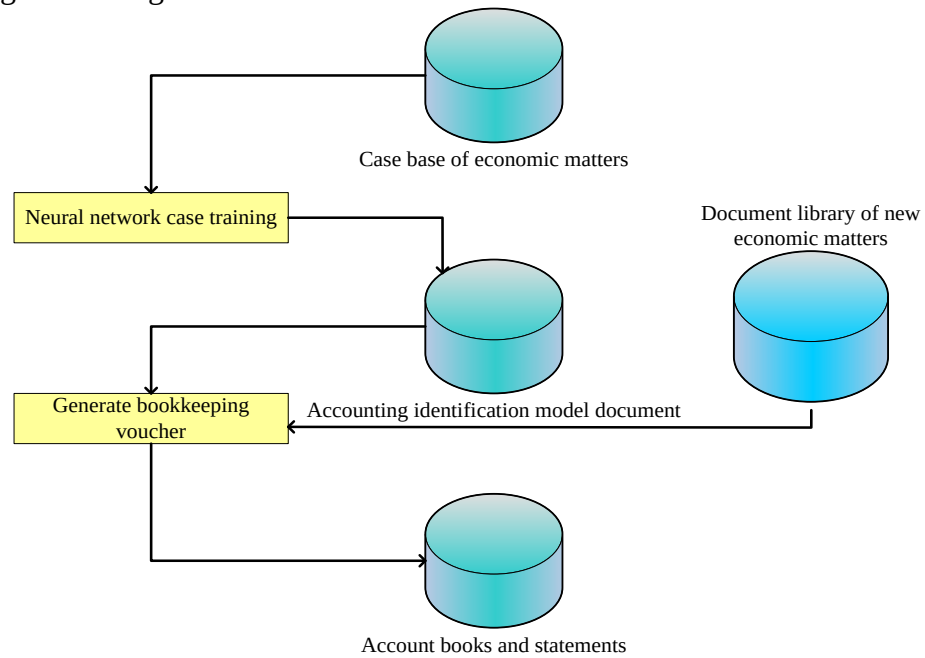

Figure 2. Flow chart of accounting element confirmation

2.2. Embedded Microprocessor Technology Method

At present, integrated circuits have entered the stage of deep sub-micron and nano-level

technology. Circuit scale and chip integration continue to improve, and microprocessors have strong processing capabilities. Embedded microprocessor evolved from the CPU in general-purpose computer. Its characteristic is that it has more than 32-bit processors and high performance. Different from computer processors, in actual embedded applications, it only retains the functional hardware closely related to embedded applications and removes other redundant functional parts, so as to realize the special requirements of embedded applications with the lowest power consumption and resources. However, the design of microprocessors also faces a series of new problems. For example, embedded microprocessors need to reduce the area and power consumption as much as possible, and the performance requirements are also very high. This means adopting more advanced technology to match its use.

(1) Low power consumption technology

For microprocessor designers, low-power design is a huge challenge. Low-power design has become a hot spot in digital circuit research today. The power consumption of embedded microprocessor design is mainly dynamic power consumption and static power consumption. The static power consumption is produced when the logic output is stable [12], which is mainly caused by leakage current. Due to the low static power consumption of CMOS, most digital integrated circuits adopt CMOS technology, which is convenient for low power consumption. For any circuit, the power consumption can be expressed by the following formula:

$$P = V \times I \tag{12}$$

In the formula, P is power consumption, V is voltage, and I is current.

To carry out a low-power design, it is necessary to understand its source, perform corresponding analysis and optimization, and the power consumption of a digital CMOS circuit can be approximately expressed by the formula:

$$P = P_q + P_a + P_s \tag{13}$$

In the formula, P_q is static power consumption, P_a is dynamic power consumption; P_s is short-circuit power consumption [13].

1) Static power consumption

The static power consumption results from the stable output state of the logic gate, and it has nothing to do with frequency. Generally, the static power consumption of CMOS tubes is extremely low. Therefore, digital circuits use CMOS tubes as the basic unit. The static power consumption can be expressed by the following formula:

$$P_q = V' \times I_{leakage} \tag{14}$$

Where V' is the power supply voltage; $I_{leakage}$ is the leakage current.

2) Short-circuit power consumption

Since the actual circuit is relatively complicated, the input signal of the circuit has rise and fall delays due to the period and other reasons, which causes the circuit to generate a short-circuit current. The short-circuit power consumption is the power consumption caused by the power flowing to the ground [14], the short-circuit power consumption in the circuit can be expressed by the formula:

$$P_s = V' \times I_s \tag{15}$$

Where V' is the power supply voltage and I_s is the short-circuit current.

3) Dynamic power consumption

Dynamic power consumption is generated in the process of turning off the logic gate, and the

inversion of the logic value of the circuit will cause the charging and discharging of its load capacitance. This charging and discharging process brings the main dynamic power consumption [15]. It is the main source of power consumption for digital circuits. Taking inverter as an example to illustrate the charging and discharging process of CMOS tube. The dynamic power consumption of the circuit can be expressed by the following formula:

$$P_a = \frac{C\rho \cdot V'^{2} \cdot F}{2} \tag{16}$$

In the formula, ρ is the node turnover rate; C is the node switched capacitor; V' is the power supply voltage; F is the clock frequency.

It can be seen from the expression that the dynamic power consumption of the circuit is related to several parameter values. When the frequency is constant, the dynamic power consumption should be reduced. Reducing the power supply voltage is the most effective way to reduce power consumption. But when the voltage drops to a certain level, reducing the node logic flip rate can also reduce power consumption and reduce the circuit node switch capacitance [16]. Shortening the length of the interconnection line and using a smaller area device can also reduce dynamic power consumption.

(2) Processor technology

The processor often exchanges data with external storage devices. Most of the instructions of the processor are related to storage. Traditional processors use a single write-back mode, which makes some controls that need to write back two registers to become complicated. For example, when the processor is doing long multiplication and multiplication, the result obtained is a bit, and it needs to use two registers to store the result. In the case of a traditional single write-back, the control and pipeline of the write-back require additional control. The double write-back structure can avoid this situation well. In this way, the performance of the processor is significantly improved by consuming a small amount of resources [17]. The related control unit has also become simpler. If the performance of the processor is improved, the time for the processor to run the program is shortened. The following relationship holds:

$$T = \frac{N}{f} \cdot \tag{17}$$

Where N is the number of program instructions, $\overline{C}$ is the average value of the clock cycles that the program takes to execute instructions, and f is the clock frequency.

(3) Dynamic threshold voltage technology

The threshold voltage refers to the input voltage corresponding to the midpoint of the transition region where the output current in the transmission characteristic curve changes sharply with the change of the input voltage. The dynamic threshold voltage technology can maintain the stability of the circuit and reduce the power consumption. The dynamic threshold CMOS tube can dynamically change the threshold voltage of the device to adapt to different operating modes of the circuit. When the circuit is in the sleep state or sleep mode, the CMOS device has a higher threshold voltage. Turning off the CMOS tube can reduce the power consumption of the entire system. When the circuit is in a normal working state, the device has a low threshold voltage to increase the driving capability of the digital circuit. In principle, ideally, a dynamic threshold CMOS tube can be realized by connecting the ordinary CMOS tube gate and the substrate together [18]. Take the inverter as an example, as shown in Figure 3:

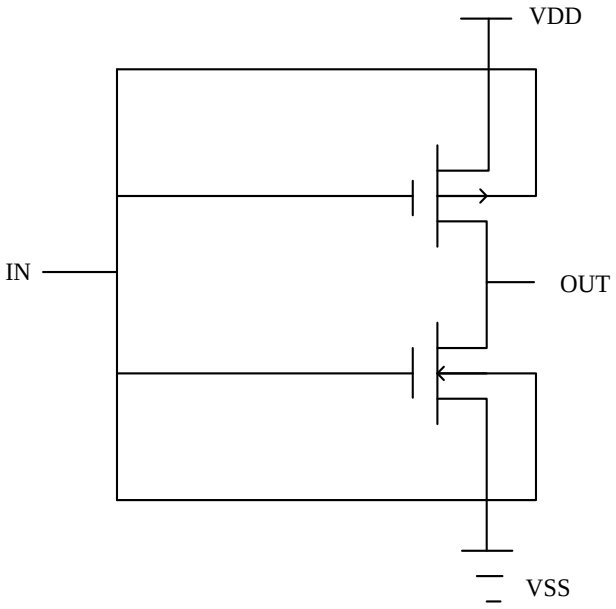

Figure 3. Dynamic threshold voltage inverter structure

2.3. Construction Method of Network Accounting Big Data Platform

Nowaday,network accounting is facing the difficult problem of processing and analyzing big data in accounting. By fully mining and analyzing big accounting data using cloud computing and other technologies, we can solve the problems of insufficient resources and delays in decision-making. In addition, the integration of accounting and business and sharing information resources have improved the relevance of accounting information quality and provided managers with new decision-making plans. The construction of the network accounting big data platform can mine, use, share and establish the hidden knowledge of the accounting big data. And to ensure the security of the data, the value of the accounting information system can be realized [19].

(1) Feasibility analysis

For the company's accounting big data Y can be considered as the integral of the independent variable x:

$$Y = \int \rho(x)dx \tag{18}$$

Among them, $\rho(x)$ is the density of accounting big data, and V can be expressed as:

$$V = Y' \tag{19}$$

Among them, the value coefficient $r\epsilon[0,1]$, when r=1, V=Y, all accounting big data has value, when r=0, V=1, only one piece of accounting data has value [20]:

$$K = \int iVdV \tag{20}$$

Where i is the knowledge conversion coefficient of useful information.

(2) Platform function construction

The accounting data analysis platform is an indispensable part of the informatization of business operations. Companies do not need to install software, and accounting operations can be conducted online at any time.

All the original accounting data inside and outside the enterprise are integrated. Using processed accounting data to integrate corporate decision-making into accounting big data. Discover the value

behind big data accounting, so as to make a more reasonable work plan for the company's decision-makers.

As far as the security of accounting big data is concerned, the security of private cloud platforms is higher than that of public cloud platforms. Although many private cloud users pay little attention to this aspect, the risks of cloud computing to the security of accounting big data still exist. It has not only security threats from the external Internet, but also internal security risks. Therefore, a security mechanism must be designed to ensure the security of the platform. Figure 4 shows the security processing flow of accounting data. The terminal sends the data to the security platform, and the service software, virtualization platform and hardware equipment layer in the platform cooperate with each other to ensure the security of the data.

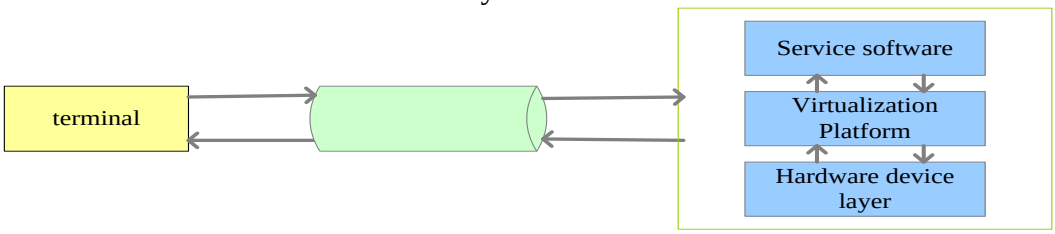

Figure 4. Flow chart of accounting data security processing

(3) Big data platform architecture

The accounting big data platform construction architecture mainly includes data acquisition layer, cloud service platform layer, data processing and storage layer, and data output display layer. The specific framework is shown in Figure 5:

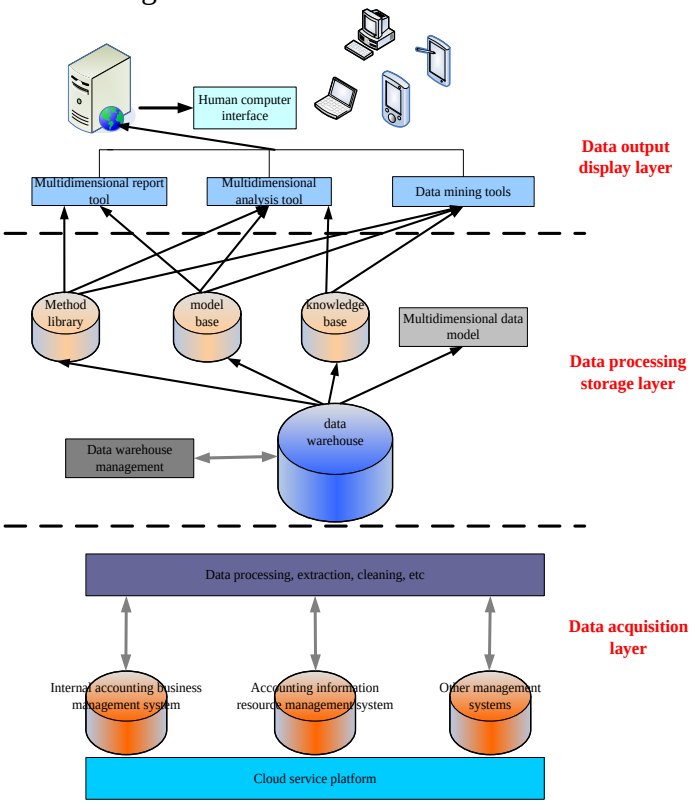

Figure 5. The overall architecture of the platform

Among them, the cloud service platform layer contains network equipment, storage equipment, and operating systems built for system management. Since the platform is based on the cloud

computing service model, the basic IT environment is provided by cloud service providers. The function of the data acquisition layer is acquired from various departmental systems within the enterprise and the external network of the enterprise. It contains accounting big data such as accounting business data, accounting financial management data, industry development, and accounting information publicly disclosed by competing companies. The function of the data processing and storage layer is to uniformly process and integrate the acquired accounting big data. The processed data is classified and stored in different databases. Human resource accounting data, product sales accounting data, customer accounting data, etc. , which are uniformly stored in the basic database.

3. Design Experiment Based upon Embedded Microprocessor Network Accounting Model

3.1. Design of Network Accounting System in View of Embedded Microprocessor

The network accounting model designed in this paper is based on an embedded microprocessor, and uses a public key infrastructure lease system, combined with secure middleware technology, and adopts a B/S(B / S is a network structure mode after the rise of web. This mode unifies the client, centralizes the core part of the system function realization on the server, and simplifies the development, maintenance and use of the system.) architecture, that is, a browser/server model. The structural design mainly includes the overall system architecture design and detailed structural design, and finally achieves the purpose of realizing system functions.

System architecture design

The premise for the establishment of the entire system architecture is: mutual visits between various departments within the enterprise, between headquarters and regional branch companies, regional subsidiary listed companies, professional companies and grassroots enterprises. And it has the network conditions required for integrated accounting and business processing and real-time monitoring. The designed system architecture diagram is shown in Figure 6:

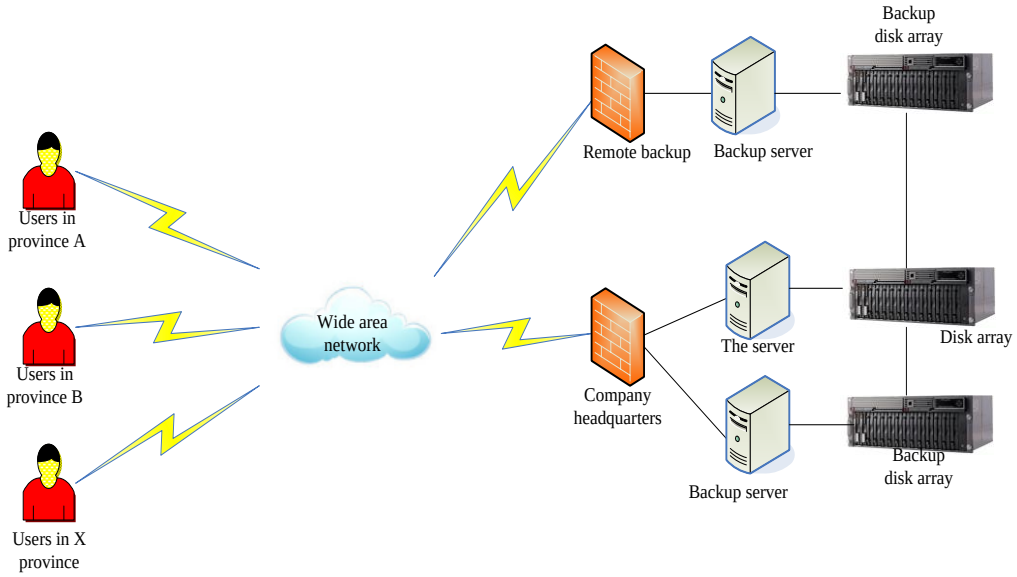

Figure 6. Architecture diagram of network accounting system

It can be seen from Figure 6 that users, WAN, groups, servers, and disks are connected through the network. To build a group wide area network through the Internet, all subordinate units must join the power local area network. As a result, the data of the entire group is circulated in the network information system to facilitate the development of accounting work. In this system, users

in various places are connected to the WAN, and then connected to the group through the WAN, and back up the data in different places. The group and different places are connected to the server to store the data in the disk.

(2) System function design

1) Basic functions of accounting system

A complete network accounting system should include the data of accounts receivable/payment, asset management, material management, project management and other management parts. It should also have a module for daily accounting processing. The specific system functions are shown in Figure 7:

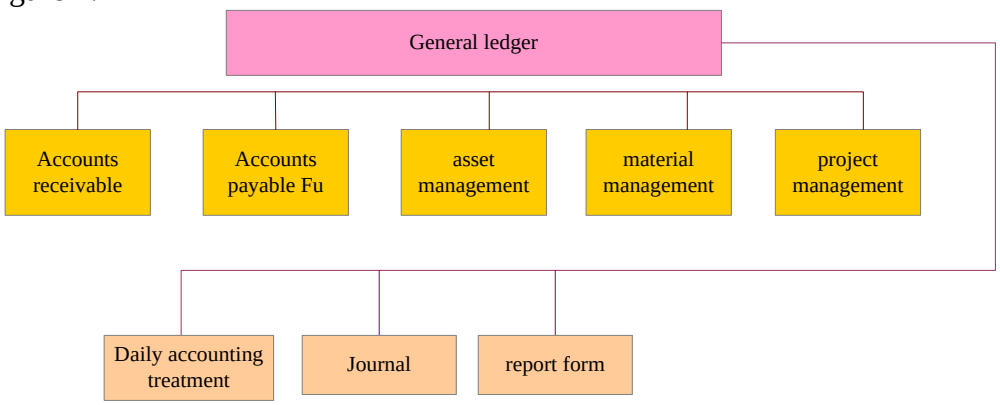

Figure 7. Schematic diagram of system functions

As the core module of its network accounting information system, the general ledger module realizes a seamless link with other subsystems. Its main functions include daily accounting processing, creation, review, posting, query, and import of journals. The general ledger module also provides a variety of report output and report definition functions. And the general ledger section must consolidate all the accounts of the subsidiaries. The main content of the accounts receivable module includes the entry of advance accounts, invoice management, daily accounting maintenance, and report output. The content of the payable module mainly includes payable information management and maintenance, payable invoices, business processing of prepaid personal loans, and employee expense reimbursement. The material management module adopts consignment sales. With a supermarket-based management model, it realizes the control of the maintenance costs of the workshops of the grassroots enterprises, and realizes the timely monitoring of the maintenance costs of the grassroots enterprises. It is a good means to achieve internal cost control of power generation enterprise groups.

2) Accounting analysis function based on big data

The construction of accounting analysis functions on account of big data is based on relevant laws and regulations. It facilitates corporate decision-making and processing. Integrating all the original accounting data inside and outside the enterprise, and converting the original data into accounting big data in order to discover the value behind accounting big data, collect, store, analyze and apply it. This mainly includes comprehensive financial analysis, comprehensive financial decision-making, comprehensive financial forecasting, comprehensive financial monitoring and other functions. The basic architecture is introduced in the method.

In the comprehensive financial analysis, including strategic analysis, accounting analysis and prospect analysis, the object of analysis is also very comprehensive. Comprehensive financial decision-making relies more on the ability to acquire, analyze, process and apply data. At the same time, with the help of big data processing technology and methods, the standardized processing of the acquired data is realized, and the financial decision analysis is optimized. In the comprehensive

financial forecast, it combines the results of comprehensive financial analysis. According to accounting big data such as historical business data and external objective environment, it can predict the business performance, financial crisis, cost budget, etc. Comprehensive financial monitoring is mainly to help managers understand the status of business operations. The implementation of corporate budgets, it can find problems in time, make adjustments, and promote the sustainable development of enterprises.

(3) Database design

Since there are a lot of data tables in the enterprise network accounting mode management system, only a few of them will be introduced in detail for related discussion and explanation.

1) The manager table mainly stores some basic information of the managers in the enterprise network accounting management system, including number, name, age, gender, contact information, address, etc. The details are shown in Table 1:

Table 1. Managers

Field name	Data type	Describe
A_id	Int(8)	Number
A_name	Varchar(8)	Name
A_age	Int(18)	Age
A_gender	Varchar(4)	Gender
A_phone	Int(18)	Contact information
A_address	Varchar(11)	Address

2) The project table is used to store some basic information of the project in the enterprise network accounting management system, including number, name, person in charge, contact phone number, partner unit, etc. The project list is shown in Table 2:

Table 2. Items

Field name	Data type	Describe
P_id	Int(8)	Number
P_name	Varchar(8)	Name
P_pinr	Varchar(10)	Person in charge
A_co	Varchar(10)	Cooperative unit
P_phone	Int(18)	Contact information

3) The accounting voucher table is used to store some basic information of the accounting voucher in the enterprise accounting management system, as shown in Table 3:

Table 3. Accounting voucher

Field name	Data type	Describe
R_id	Int(8)	Number
R_name	Varchar(8)	Name
R_kuaij	Varchar(10)	Accounting
R_time	Date	Time
R_jine	Float	Amount of money

3.2. Experimental Realization and Analysis

(1) Forecast function of network accounting system

We cooperate with X, an e-commerce online store. The network accounting system designed in

this experiment is applied to the accounting department of the store, so as to obtain the forecast data and real data of the accounting system, and verify the forecast accuracy of the system.

In order to test the predictability of the platform, the company imported all financial data from 2005 to 2011 into the platform. It can forecast 2012-2020 operating income, operating costs and the financial situation of the two expenses. Now there is the actual financial situation from 2012 to 2020, and the accuracy of the platform's forecast can be verified by comparing the predicted number with the actual number.

1) Operating costs and operating income

Based on the operating income and operating costs from 2005 to 2011, the platform can automatically predict the operating income and cost data afterwards. Users can choose to predict the next few years, after which the platform will arrive at the result. This experiment chose to predict the operating income and operating costs from 2012 to 2020, and then compare the predicted data with the actual data, and the results obtained are shown in Figure 8:

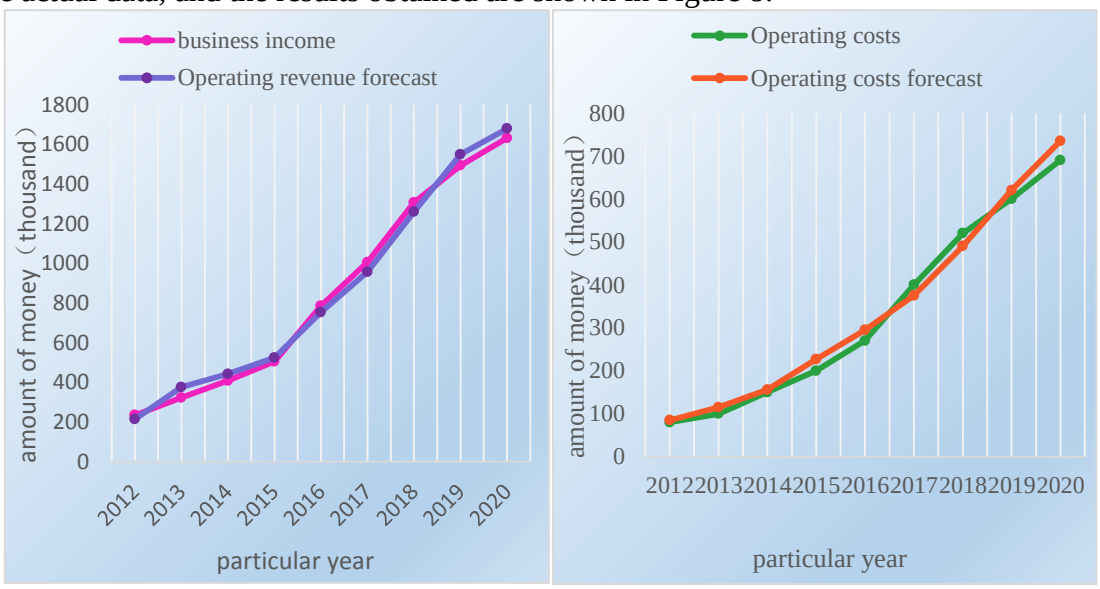

Figure 8. Operating income and cost data

It can be seen from Figure 8, the operating income and operating cost of company X are increasing year by year, and the difference between operating income and cost is also increasing year by year, which proves that the profit of the company is increasing. Whether it is operating income or operating cost, the real data is very close to the predicted data value of the system. We first calculate the exact value of the annual forecast of operating income, and then average it. After calculation, it is found that the average accurate value of the operating income forecast is about 94%. Using the same method to calculate the average accurate value of the operating cost forecast, the result is 93%. It can be seen that the network accounting system's forecast accuracy rate for operating income and costs is relatively ideal.

2) Sales expenses and management expenses

Import the sales expenses and administrative expenses from 2005 to 2011 into the platform, and the platform automatically predicts the subsequent sales expenses and administrative expenses data. This experiment predicts the sales expenses and management expenses from 2012 to 2020, and then compares the real data with the predicted data, and the results are shown in Figure 9:

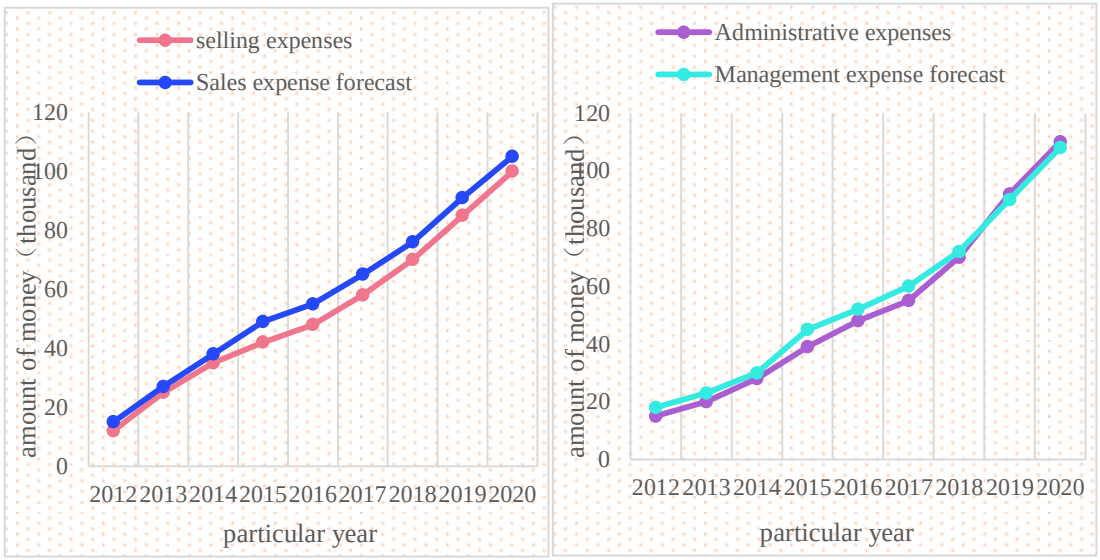

Figure 9. Sales and management expense data

It can be seen from Figure 9 that the predicted value of both management expenses and sales expenses is slightly higher than the real value most of the time, and these two values are also increasing with the increase of years, which proves that the company's operation is good. It can be seen from Figure 9 that both sales expenses and management expenses are close to their predicted values. We add up the forecast accuracy rates of each year and average them, and get the network accounting platform's forecast accuracy rate of 90% for sales expenses. The prediction accuracy rate for management expenses is 92%, and neither is less than 90%.

(2) System operation function

In today's era, fast and convenient are the hallmarks of the Internet. For an accounting system, high efficiency and stability are the basic performance it should possess. This experiment tests the operational carrying capacity and response capacity of the system, and the results obtained are shown in Figure 10:

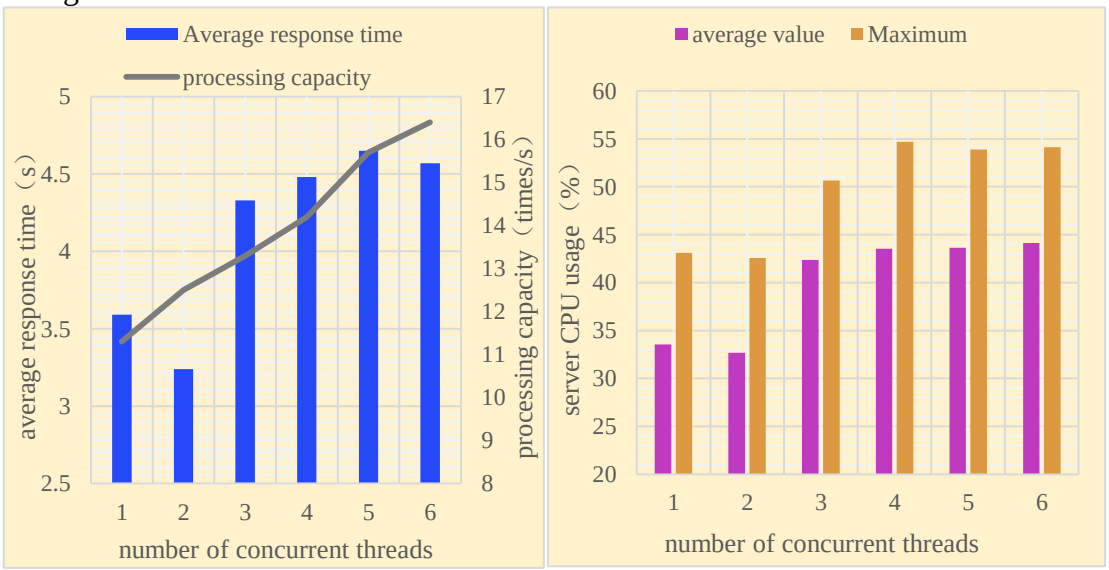

Figure 10. System operating capability parameters

Figure 10 shows some operating parameter data of the network accounting system. It can be seen

from the figure on the left that the average response time of the system with different thread numbers is 4.67s at the highest. Taking these average response times to average again, the result is 4.14s, which is an ideal result. Then average the processing capacity of the system under different threads, and the result is 13.9time/s. The figure on the right shows the server occupancy rate when the system processes data in different threads. We averaged the average occupancy rate of different threads, and the result was 39.99%. Then average the maximum server occupancy rate under different threads, and the result is 49.83%. It can be seen from that the operating parameters of the system are all within the ideal range.

To sum up, the network accounting platform has high accuracy in prediction based on big data. Its average accuracy is not less than 90% for operating revenue, operating cost and two expenses, and its processing capacity is also within the ideal range in terms of system operation.

4. Discussion

The Internet age has changed the production structure and labor structure of the entire social economy, broke the traditional business model and accounting model, thereby changing the standard form of accounting practices, and shaken the traditional accounting theory. And network accounting adapts to the rapid changes of computerized enterprises, and it can reflect the enterprise environment, competition, and customer needs in a timely manner. It can calculate and operate in real time, and realize the connection with the accounting information of other enterprises. The Internet era is also the era of big data. Big data has brought fresh blood to this new model of network accounting, and added new functions to the network accounting model. In today's multimedia environment, economic models such as online enterprises and virtual enterprises are developing rapidly. This requires a more mature network accounting model management, so it is necessary to develop a stable and multi-functional network accounting model. The embedded microprocessor tends to be miniaturized in design, but also has high efficiency and reliability, which meets the hardware requirements of network accounting mode. It is very valuable for the system research and development of network accounting.

5. Conclusion

The Internet environment of the 21st century has promoted the emergence and development of the network accounting model, but its development is still in its infancy for the time being, and its development is not mature. Therefore, it is necessary to develop a good method to enable this model to perform its maximum function. This paper studies the network accounting mode management based on embedded microprocessors. First, this paper introduces the related methods of network accounting and embedded microprocessors, and then designs a network accounting system based on embedded microprocessors. This system has general accounting functions, including general ledger management, daily accounting management, statements, etc., in addition, there is also a forecasting function based on big data. We experiment with the system to predict the financial situation of an e-commerce company X. The results obtained are as follows: (1) The average accuracy of the system's forecast of operating income is about 94%, and the average accuracy of forecast of operating costs is 93%. (2) The accuracy rate of the network accounting system for forecasting sales expenses is 90%, and the forecasting accuracy for management expenses is 92%. And to test the operating performance parameters of this system, the results are as follows: (1) The average processing capacity of the system is 13.9time/s. (2) Averaging the average server occupancy rate under different threads, the result is 39.99%. Then averaging the maximum server occupancy rate under different threads, and the result is 49.83%. It can be seen that the predictive ability and operational performance of the system are relatively good. This experiment is generally successful,

but there are still many improvements. For example, there are few system performance testing experiments due to limited conditions, and the research on the model of network accounting can be more in-depth.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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