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Blockchain Supply Information Sharing Management System Based on Embedded System

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Abstract: With the progress of economic globalization and human beings have entered the era of knowledge economy, the growth of enterprises is facing multi-level competition. With the increase of users' personal development, the diversity of needs puts forward higher requirements for enterprises in the face of a complex market environment. The purpose of this article is to cater to the needs of the times, to further expand and optimize its own information sharing model, and to propose a new supply information sharing management model based on embedded systems. Mainly use regional chain technology to conduct research in the following aspects, including the theoretical basis of regional chain and information sharing, and the comprehensive analysis and management of existing information sharing models in the supply chain. Through a comprehensive analysis of the data, this paper concludes that the values of AVE are all above 0.5, and the values of CR are all higher than 0.8, so it can be considered that the convergence validity of the model is good.

1. Introduction

1.1. Background

At the end of the 20th century, with the globalization of the world economy, the information industry has gradually become a pillar industry for the development of the national economy, and the joint conflict between politics, economy, and culture has intensified. In a knowledge-based society, the relationship between enterprises and people has also undergone tremendous changes. In the late 1990s, the concept of branch offices spread from Japan to China. A new type of business model is gradually being developed within and between enterprises to jointly find suitable production sites, use the network to configure external resources of the enterprise, and adopt effective supply chain management strategies to manage the enterprise. In our country, the five development concepts of coordination, greenness, openness and sharing put forward by the Fifth Plenary Session of the 18th Central Committee. The sharing economy uses information technology to build resources. The relationship between the supplier and the applicant, through the separation of product ownership and use rights, realizes the social sharing of inactive resource use rights, and uses this model to achieve the purpose of reusing and increasing the use of excess resources.

1.2. Significance

Research on the information exchange issues in supply chain management is of epochal significance. The emergence of the supply chain meets the requirements of the new era. As a new management concept and management method, its progress is not only reflected in the full use of the company's internal resources, but also special attention to external resources related to operations, emphasizing the integration of all resources in the supply chain, the resources and competitiveness of the enterprise. Study the importance of the construction of supply chain management information exchange mode for Chinese enterprises to respond to supply chain management. Competition in the globalization of the market has enhanced the competitiveness and management level of the market. In today's globalization of enterprises, customers are increasingly demanding products and services. For companies, how to better meet customer needs, improve their own competitiveness in the market, reduce operating costs to maximize operating profits, has become an important issue. However, a good supply chain mechanism can better solve this problem. In the supply chain, the company establishes cooperative relations with other companies through various forms such as external procurement and strategic alliances to jointly manage all aspects of the company's corporate activities. In the production and circulation process, the supply chain, information flow and capital flow should optimize the efficiency of the supply chain.

1.3. Related Work

Blockchain technology has been applied to many fields such as data management, cloud computing, and Internet of Things due to its decentralization, transparency and non-tamperability. Zhu P proposed and developed a blockchain service architecture to enhance the traceability of information and the effectiveness of protection. Including distributed data storage, point-to-point transmission, consensus mechanism and encryption algorithm. Through this blockchain-based traceability system, the registration and other related transactions of the original results can be recorded, protected, verified and tracked [1]. D Mao provides a blockchain-based credit evaluation system that collects credit evaluation texts from traders through smart contracts on the blockchain. The collected text is then directly analyzed by a deep learning network called Long Short-Term Memory (LSTM). Finally, the credit result of the trader is used as a reference for the supervision and management of the regulatory agency. Through the application of blockchain, traders can be responsible for their actions in the transaction and credit evaluation process [2]. In order to study the performance of a light-loaded blockchain system, Qi J established a discrete-time non-exhaustive vacation queue with batch processing services and gated services. By using the embedded Markov chain method and the regeneration cycle method, we derive the average response time of the transaction [3]. Although experts have thoroughly analyzed the architecture of the blockchain supply information sharing management system, some theories do not have practical significance.

1.4. Innovation

There are three main innovations in this article. (1) Innovation in topic selection. At present, there are not many researches on the integration of embedded systems, blockchains, supply information, and shared management system architecture. It is exploratory Meaning. (2) The innovation of research methods, proposed the construction of blockchain technology and supply chain model, which has strong theoretical value and enriches the research on the architecture of blockchain supply information sharing management system. (3) The innovation in practice and the research on the construction of information sharing mode in supply chain management are of great significance for Chinese enterprises to respond to market globalization competition and improve their competitiveness and management level.

2. Proposal and Research of Related Theories

2.1. Blockchain Technology

Blockchain [4] is essentially a distributed world database of a peer-to-peer network, consisting of multiple homogeneous nodes, and ensuring the consistency of transaction data and data through a consensus algorithm. A complete blockchain system is a chained data structure that connects a data block in chronological order. The segmentation algorithm should be used to verify the integrity and authenticity of the data [5], and a consent mechanism should be established to verify the integrity and authenticity of the data. The trust between nodes and the smart contract composed of automatic script codes provide a new infrastructure and a computer instance block chain for the distributed system. The underlying blockchain technology network model provides a method of storing distributed data, ensuring the stability and effectiveness of the model network. Use encryption technology for digital signatures and highly encrypted account information to ensure data transmission [6] and secure access-CCP replaces third-party intermediaries [7] to provide technical support for trade security and user confidence. In the blockchain system, the data generated by the participants' transactions are packaged into a data block. The data blocks are arranged in chronological order to form a chain of data blocks. All nodes participate in the verification, storage and maintenance of blockchain system data.

(1) The structure and composition of the block chain. Each block generally includes a block header and a block body. The block chain structure is shown in Figure 1:

(2) The hierarchical structure of the blockchain

The hierarchical structure of the blockchain system is a necessary element for the construction of blockchain technology [8]. In the article "Current Status and Prospects of Blockchain Technology Development", Yuan Yong divides the blockchain framework into six levels: data layer, network layer, consensus layer, incentive layer, contract layer and application layer. In "Blockchain Technology: Architecture and Progress"[9], Shao Qifeng and other scientists divided the blockchain platform into five layers: network layer, consensus layer, data layer, smart contract layer and application layer. By discussing the hierarchical structure of the blockchain, the data layer, network layer and consensus layer are necessary factors for the integrated technology system of the blockchain. Combined with the service objects of blockchain technology, the hierarchical structure of the blockchain framework is divided into four levels: data layer, network layer, consensus layer and application layer.

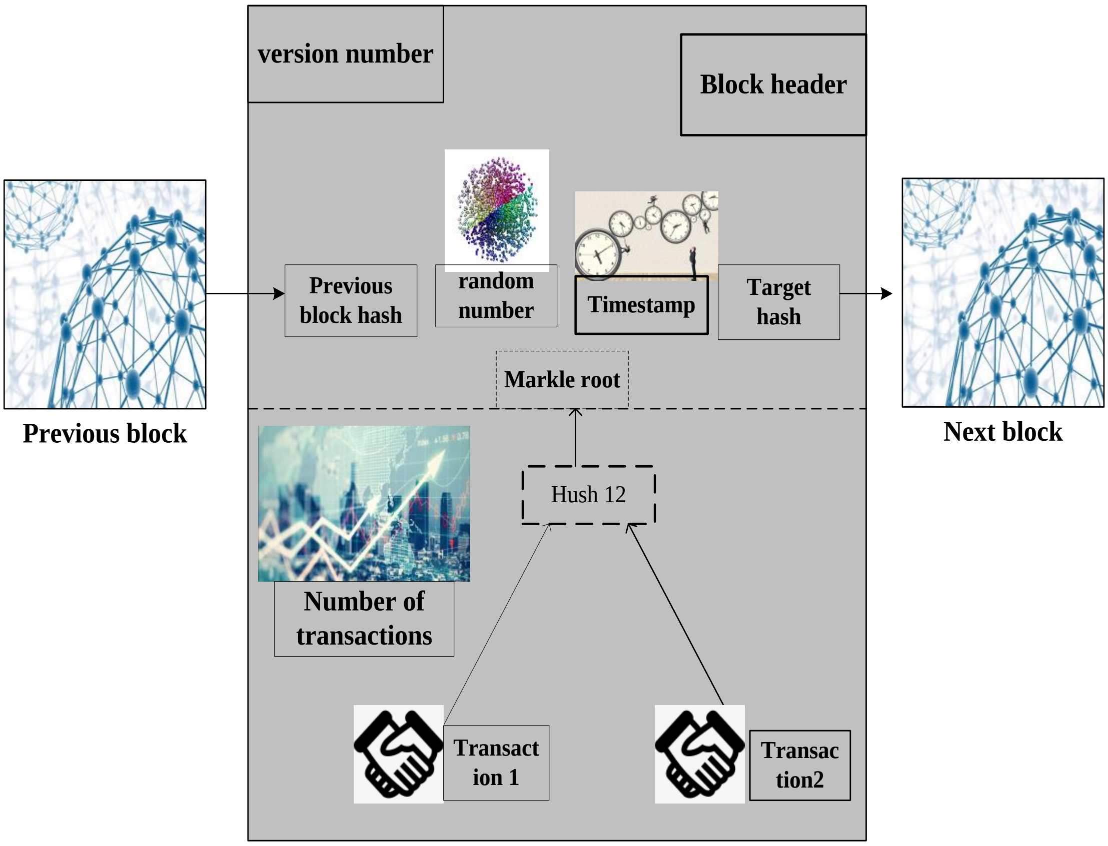

Figure 1. Blockchain structure diagram

2.2. Supply Chain Information Management System

Supply chain information management system [10] can be understood as: Based on the concept of supply chain management, according to the actual business needs in supply chain management, using information technology tools, various business processes in supply chain management are closely connected with the information system. Together, they form a series of software systems to help managers achieve supply chain management goals, such as shortening order processing time, improving order processing efficiency and order completion rate, reducing inventory levels, increasing stock turnover, and reducing capital delays. Professional providers of supply chain information management software[11] often use their customer resources and management research advantages to collect and analyze the supply chain management processes of a large number of enterprises, and use information technology to solidify them into the management software to refine and form The best business practice processes for different industries. In the supply chain information management system, according to all the processes of the supply chain, it can be divided into three main parts:

Customer Relationship Management (CRM) software that focuses on downstream processes, Internal Supply Chain Management (ISCM) software that focuses on internal processes [12], and Supplier Relationship management (Supplier Relationship) that focuses on upstream processes Management, SRM) software. The overall data flow diagram of the supply chain system is shown in Figure 2:

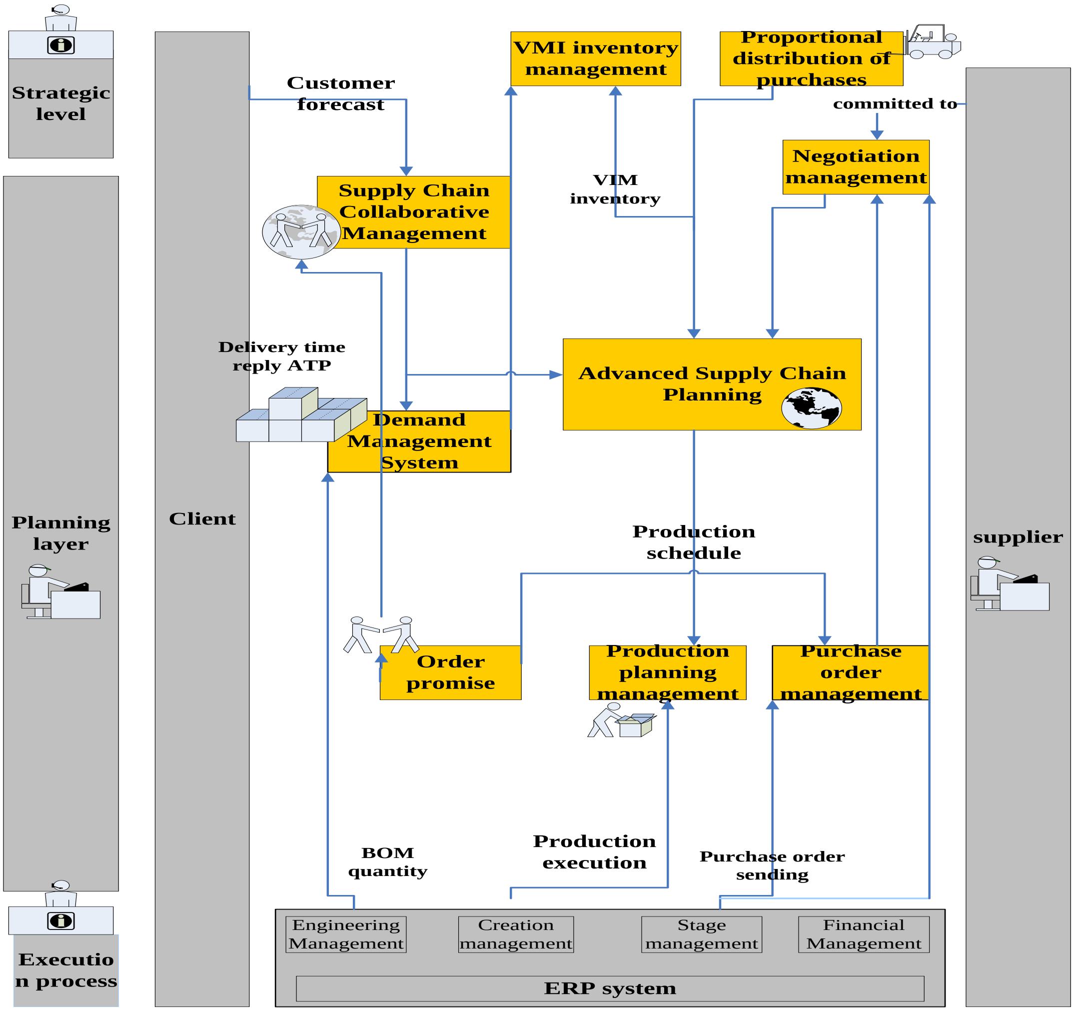

Figure 2. Schematic diagram of the overall data flow of the supply chain system

2.3. Definition and Classification of Information Sharing

Before discussing information sharing, we need to simply distinguish the group of similar concepts of data, information, knowledge and wisdom [13], as shown in Table 1:

Data reflects the objective state of the real world. Generally, it is simply described by words or numbers, and the fragmented data is almost connected and makes no sense on its own. In the enterprise, it is the description and statistics of specific business processes, including production, processing, storage, sales and other business and events. The information is the data after formatting [14]. It has already possessed a certain meaning, and the information makes the data related, which can provide people with a preliminary reference for judgment and decision-making. Knowledge is processed and refined information, which synthesizes all kinds of information and draws systematic conclusions based on the internal correlation of the information. It is also the regular viewpoint and cognition drawn by people abstracting the specific characteristics of things in the objective world. Wisdom is more abstract, streamlined, and systematic knowledge. It may be a habit of thinking about problems, a way of thinking about phenomena.

Table 1. Comparison table of related concepts

	Data	Information	Knowledge	Wisdom
Source	Objective description of facts	Organized and formatted Data	People's refining of information And sublimation	The experience formed by the melting of knowledge Habits and opinions
Form	Text, numbers, fragmented Objective record	Formatted data	Integration of decision-making and judgment Sexual cognition	Some kind of problem-solving priority Dimensional model
Abstract Sex	Simple fragmentation	Clear	With a certain degree of abstraction	Abstract and complex
Example	Total annual income of the enterprise	Corporate net profit margin	Enterprise Advantage Asset Project	Core competitiveness of enterprises

3. Construction of Supply Chain Model

3.1. Model Establishment

(1) Traditional model. Under the traditional supply chain information collaboration model, the centralized management model of the supply chain database [15], on the one hand, leads to limited information collaboration content and incomplete information sharing; on the other hand, the various links cannot be intelligently connected, resulting in information lag. The phenomenon is serious. Therefore, manufacturers and suppliers cannot obtain accurate market demand information, and suppliers have to pay additional inventory costs. At this time, the revenue of the supplier and the manufacturer are:

$$\pi_1 = (p_1 - g_1 - g_2)\ q = (p_1 - g_1 - g_2)(f - jp_2) \quad (1)$$

$$\pi_2 = (p_2 - p_1)q = (p_2 - p_1)(w - jp_2) \quad (2)$$

According to the inverse induction [16] solution method, the optimal solutions of the supplier and the manufacturer are obtained respectively.

The two sides of the manufacturer's income expression simultaneously obtain the partial derivative of the product sales unit price P_2, and we get:

$$\frac{\partial \pi_2}{\partial p_2} = r - 2jp_2 + jp_1 \quad (3)$$

Let (3) get 0, then we can get:

$$p_2 = \frac{s + jp_2}{3b} \tag{4}$$

Substituting equation (4) into equation (1) and finding the partial derivative of P_1, we get:

$$\frac{\partial \pi_1}{\partial \pi_2} = \frac{1}{2}\left[a - 3jp_1 + b(c_1 + c_2)\right] \tag{5}$$

Let equation (5) be 0, we get:

$$p_1 = \frac{a + b(c_1 + c_2)}{4b} \tag{6}$$

Substituting equations (4) and (6) into the income expressions of suppliers and manufacturers, we get:

$$\pi_1 = \frac{\left[a - b(c_1 + c_2)\right]^2}{4b} \tag{7}$$

$$\pi_2 = \frac{\left[a - b(c_1 + c_2)\right]^2}{8b} \tag{8}$$

(2) New model. Under the blockchain-based supply chain information collaboration model, data is jointly managed by all supply chain companies in the distributed network, and the application of smart contracts [17] makes each link intelligently respond and achieve seamless connection. Supply chain companies All the information dynamics of all enterprises can be obtained in real time. Therefore, suppliers and manufacturers can accurately obtain market demand information, and suppliers do not need to pay additional inventory costs. At this time, the revenue of the supplier and the manufacturer are:

$$\pi_1 = (p_1 - j_1)q = (p_1 - j_1)(a - jp_1 + \beta) \tag{9}$$

$$\pi_2 = (p_2 - j_1)q = (p_2 - j_1)(a - jp_2 + \beta) \tag{10}$$

According to the reverse induction method, the method is the same as above, and the optimal selling price of the supplier and the manufacturer [18] and income are obtained respectively.
They are:

$$p_2 = \frac{b + \beta + gp_1}{2f} \tag{11}$$

$$p_1 = \frac{b + \beta + gn_1}{2f} \tag{12}$$

$$\pi_1 = \frac{(b + \beta - gn_1)^2}{8f} \tag{13}$$

$$\pi_2 = \frac{(b + \beta - gn_1)^2}{16f} \tag{14}$$

3.2. Model Data Setting and Related Assumptions

Before setting the initial value of the variable,it is necessary to set the simulation conditions of the VensimPLE simulation software[19].This article sets the time unit as:day,time step=1 day,data recording step=1 day,start time is 0 day,and end time is 200 days,which means that the simulation is based on days and the data is saved once a day.There are 200 sets of data in total.

(1)Model data setting

The parameter setting of each variable in the model refers to relevant domestic and foreign documents and the actual operation of VMI in the enterprise.First set the initial valuesof the five state variables,set VII to 500suit,VI to 3000suit,RII to 500suit,

RI is 200suit and CN is 500suit.Then set the initial values of parameters related to inventory replenishment and demand forecasting and quality information

The initial values and maximum and minimum values of the variables of the information sharing subsystem are shown in Table 2.In the quality sharing,"1"is VQ and

The standard level of RQ.Finally,four test functions are set for the quality impact factor[20],namely:step test function 1-STEP(0.2,50),pulse test function 1-0.2*PULSE(50,10),random test function RANDOM

UNIFORM(0.8,1,1),sine test function 0.9+0.1*SIN(2*3.14159*Time/20).

Table 2. Setting of related variables in the information sharing system

Parameter	Initial value	Minimum	Max
VIAT	4/day	—	—
VOLT	3/day	—	—
VDFT	29/day	—	—
VICF	4	—	—
RIAT	4/day	—	—
ROLT	3/day	—	—
RDFT	29/day	—	—
RICF	3.5	1	2
VPQF	0.5	1	2
VERCF	0.5	1	2
VSQF	0.5	1	2
VGHS	0.5	1	2
VGHD	0.5	1	2
VHJK	0.5	1	2
RGHB	0.5	1	2
RGH	0.5	1	2
RHU	0.5	1	2
RBH	0.5	1	2
VGH	0.5	1	2
RDS	0.5	1	2

(2) Model assumptions

Hypothesis 1: This article mainly studies the impact of quality changes on supply chain VMI inventory management [21], so in the simulation analysis.In the process, it is assumed that the growth rate of orders remains unchanged, that is, customer demand maintains a stable growth rate, and customers will not seek other suppliers within.

Hypothesis 2: The eight parameters of VIAT, VOLT, VDFT, VICF, RIAT, ROLT, RDFT, and RICF remain unchanged.

3.3. System Model Test

According to the research purpose and to ensure the validity of the constructed model in simulation, this paper uses Vensim PLE simulation analysis software to conduct dimension [22] and extreme condition tests on the constructed VMI inventory management flow graph model. The detection of the dimensional consistency of the flow graph model can be completed by using the dimensional detection of the Vensim PLE simulation analysis. This detection ensures the unity of each variable unit of the model. In the process of extreme condition detection, it is necessary to first input a maximum or minimum value for one or several variables according to the correlation between the variables, and then observe the change of the correlation value to analyze whether the constructed expression is reasonable. This article will study the changes of related variables under three extreme conditions: VQ and RQ=0, VOR=0 and ROR=0, as shown in Figure 3:

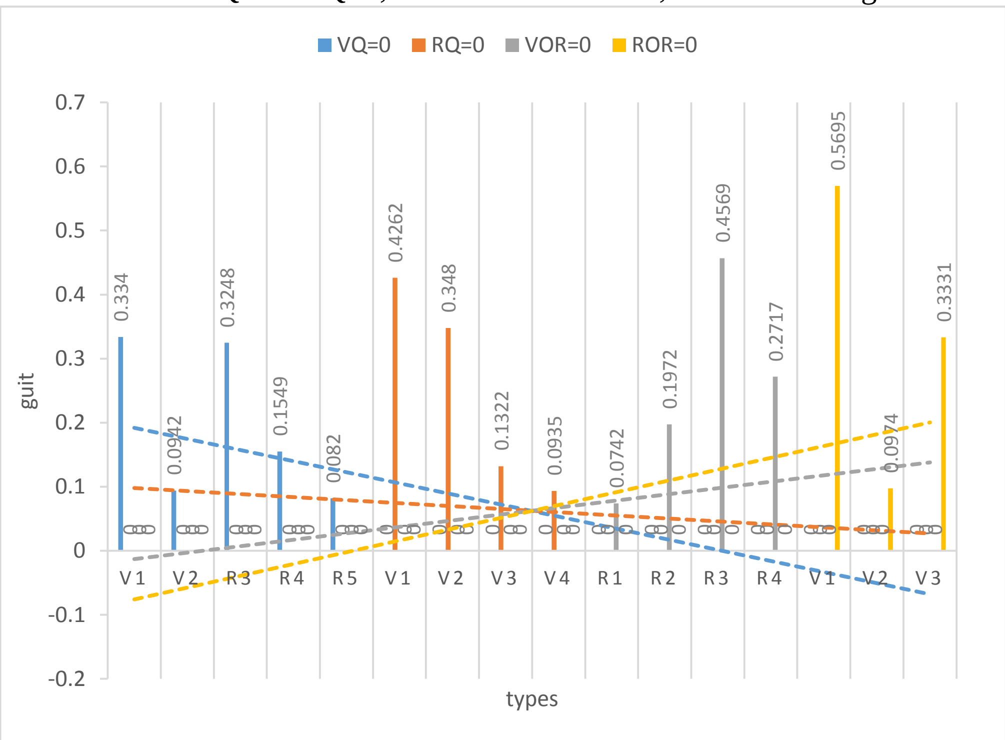

Figure 3. Changes in related variables

It can be seen from the figure that customer demand is on a rising trend, because when the quality is 0, customers will temporarily stop buying goods from retailers. Before customers seek other suppliers, the accumulation of customer demand will continue to increase. Supplier inventory is in a continuous downward trend, because retailer demand has always existed, and suppliers will maintain a certain sales rate in order to meet retailer demand. Therefore, supplier inventory will continue to decrease when the ordering rate is 0. Retailer inventory is in a continuous downward trend. Because customer demand always exists, retailers will maintain a certain sales rate in order to meet customer demand. Therefore, retailer inventory [23] will continue to decrease when the order rate is 0.

4. Construction of a New Mode of Information Sharing Under the Environment of Supply Chain Management

4.1. Operating Characteristics of User-Customized Information Sharing Mode Based on Collaborative Databas

Based on the analysis of the advantages and disadvantages of the above information sharing model, using supply chain and supply chain management, collaborative database system, information sharing [24] and other related theories, using collaborative database technology to build an information sharing model based on supply chain management, Solve the problem of information sharing in supply chain management. This paper constructs the following user-customized information sharing mode based on collaborative database, as shown in Figure4:

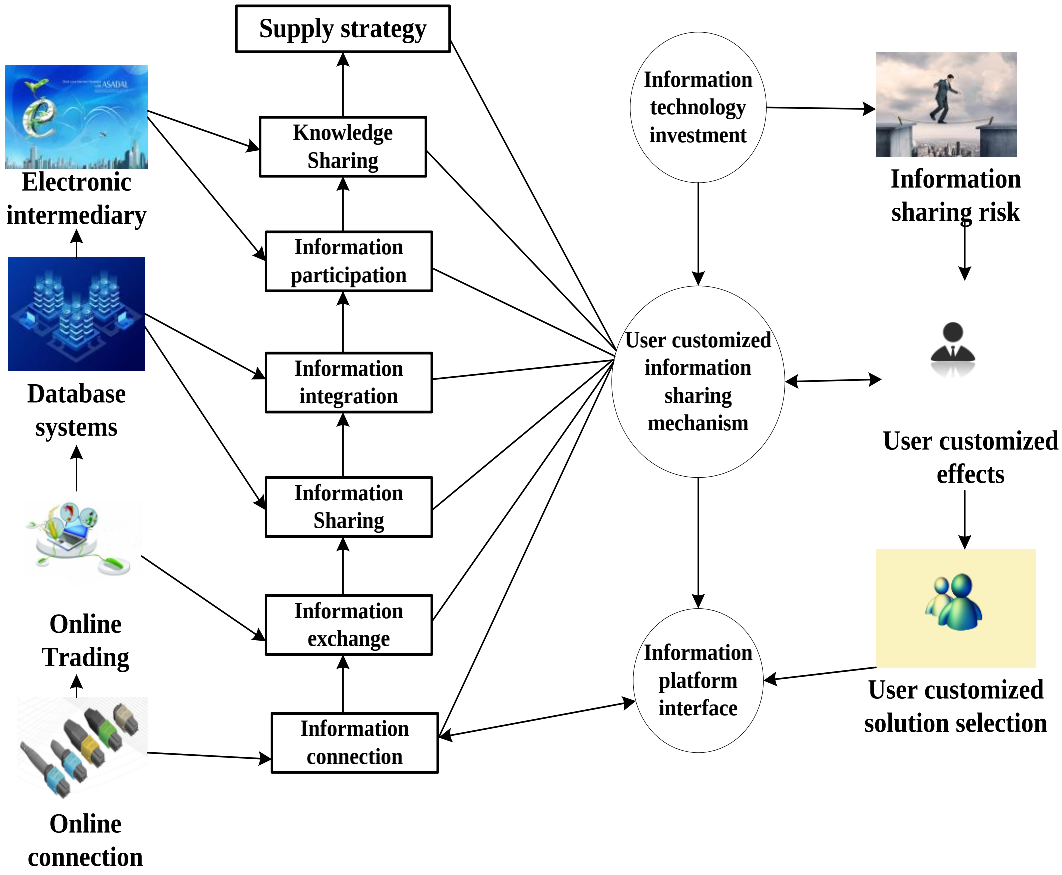

Figure 4. User customized information sharing model

The internal realization of this model should be supported by three dimensions, the right time, the right information and the right scope. Several conditions are needed in supply chain management to ensure the smooth progress of this mode, as shown in Figure 6:

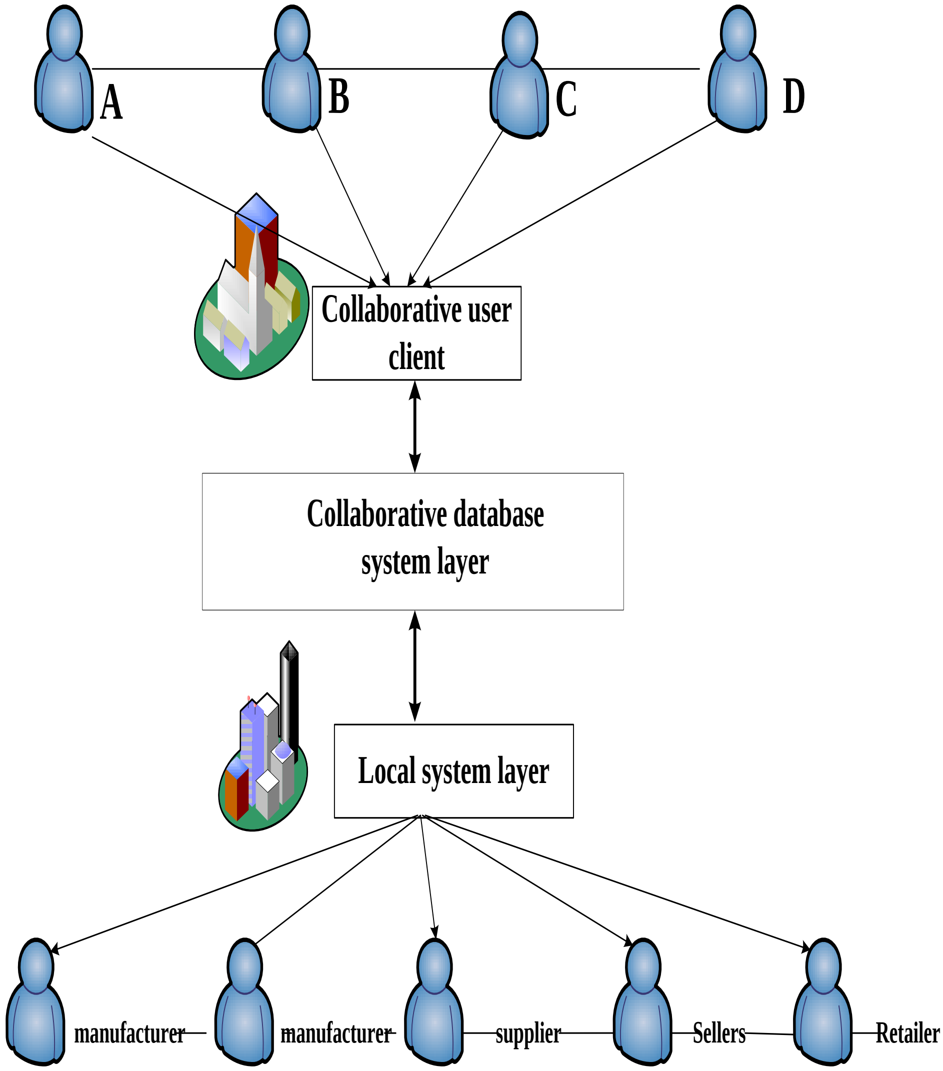

Figure 5. User customized information sharing mode based on collaborative database

First, different types of information can be transferred between various business entities in the supply chain to ensure the smooth flow of information.

Second, each enterprise in the supply chain should have the same desire for information sharing and cooperation aspirations to ensure that upstream and downstream enterprises establish a cooperative partnership of sharing information.

Third, in supply chain management, quantify the time required to share information in the supply chain and the input cost of each enterprise entity, establish a balance mechanism between information input and effective information acquisition, and ensure the coordination of various enterprise entities in the supply chain profit distribution.

Based on the above three necessary conditions, each enterprise in the supply chain has to choose an appropriate information sharing model according to its own situation. In order to achieve the maximization and optimization of information sharing, it is necessary to invest in the core information, knowledge and information cost of the enterprise. Consider and weigh the aspects of obtaining effective information and optimizing the profits of your own enterprise. Through the effective management of the supply chain, the decision makers of each enterprise can obtain all kinds of information needed in the transmission of chain information, clarify the relationship between the various systems of the supply chain, coordinate with the decision-making between each system, and avoid the sharing of information. Risk, proper control of the level and scope of information sharing can achieve the best results in the user-customized model.

In addition, the external implementation of this model requires the establishment of an information sharing platform with the help of a collaborative database [25] to ensure its implementation. The collaborative database system layer is composed of a global management sub-layer and a local management sub-layer. User requests passed through the application layer are received and processed by the global management sub-layer into multiple scattered local requests. The local management sub-layer consists of communication networks and distributed After the computing platform receives it, it transforms the user's request form according to the characteristics of the enterprise database at each node of the supply chain to find the content that matches each other, and then converts the found content information into a form acceptable to the global management sub-layer and feeds it back to the global management The sub-layer is finally passed to the collaborative database application layer. Integrating and coordinating all kinds of information in the entire supply chain is mainly to meet the information needs of enterprises in each link of the supply chain, improve the operation efficiency of the entire supply chain, and then ensure that the interests of enterprises at each node are optimized. In this mode, it is necessary to rely on collaborative database system technology to ensure that when users send information demand signals, a centralized information sharing and storage platform can receive information, and perform internal digestion, sorting and distribution of the platform, corresponding to the content of the enterprise database of each node To match information needs, at the same time, each node enterprise can also query related information and pass it to the information storage platform, so that the node enterprise interaction can be more timely and smoother. At the same time, all upstream and downstream enterprises in the supply chain can use this information platform for information shared.

4.2. Value Analysis of Information Sharing in the Supply Chain

No information sharing through the discussion and analysis of the two situations of whether information sharing is implemented in the supply chain, it can be known that the impact of information sharing on the bullwhip effect is different. Only from the two-type structure, we can see that the bullwhip effect has been weakened after the implementation of information sharing in the supply chain. The following is a detailed analysis of the value of information sharing.

First, the demand information in the supply chain is not shared, only the retailer closest to the end customer has the demand information, and other members at all levels can only predict demand information through the order information of the neighboring next-level members. Because of these comparative analysis and information sharing, the demand on the order has been modified and adjusted, resulting in a huge deviation from the actual customer demand, and the ratio of its variance to the variance of customer demand is increasing exponentially. Therefore, the lack of sharing of supply chain information will exacerbate the bullwhip effect.

Second, after the implementation of information sharing in the supply chain, each level of the supply chain members can obtain the actual demand information of the end customer, and the deviation between the forecast results of each level member and the actual customer demand will be small. The ratio of the variance of the order quantity to the variance of customer demand is increasing in a sum. Therefore, the implementation of information sharing in the supply chain can effectively reduce the bullwhip effect. One thing that needs to be explained here is that although the information in the supply chain is shared, and members at all levels adopt the same forecasting method and inventory strategy, there will still be a bullwhip effect in the supply chain. The implementation of information sharing can only bring about a weakening effect, rather than completely eliminate it. Finally, calculate the data, and then draw based on these data, compare and explain in a more vivid way.As shown in Figure 6:

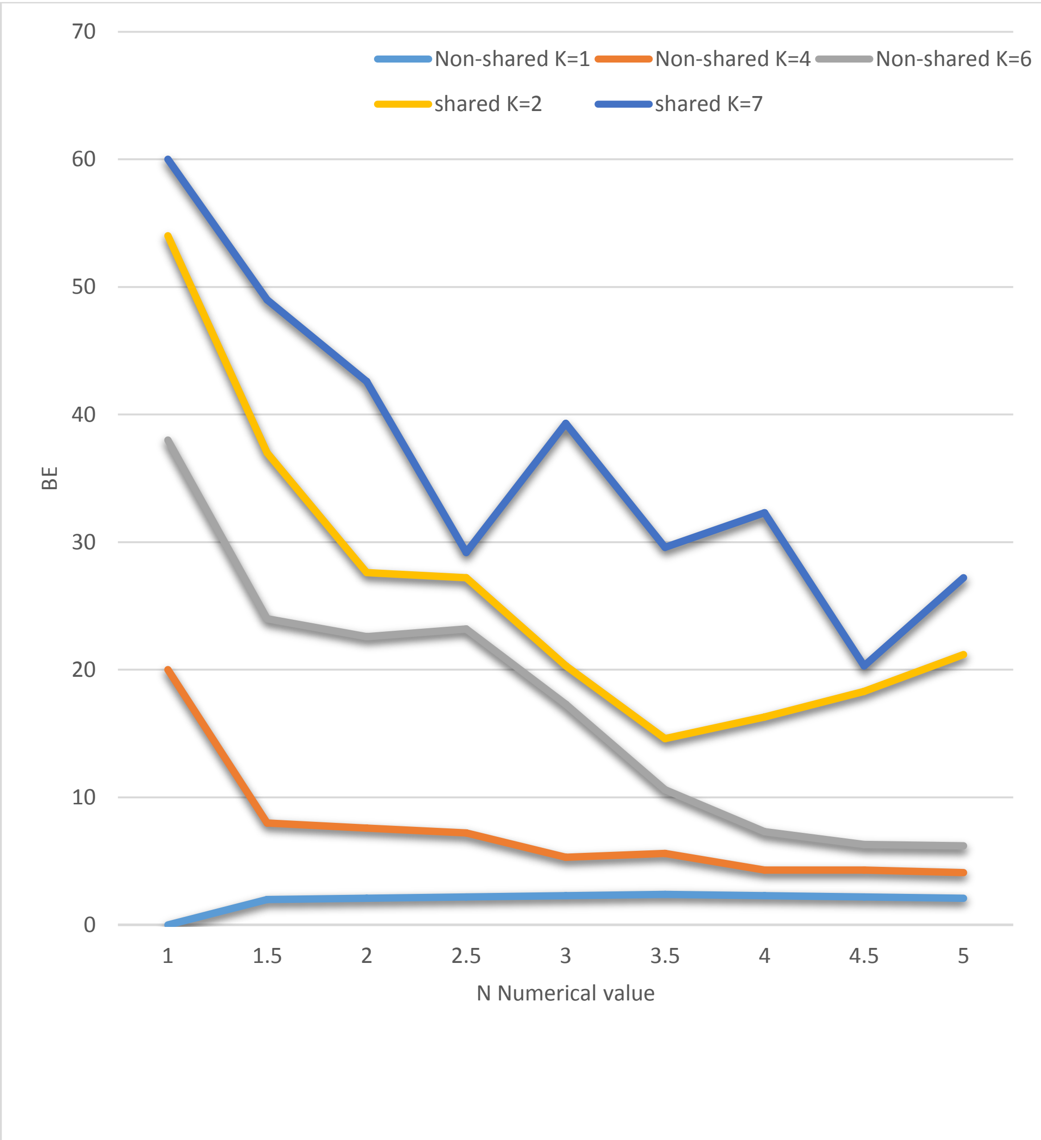

Figure 6. Comparison of the bullwhip effect with or without information sharing in the supply chain

4.3. Data Analysis

(1) Descriptive statistical analysis: The following is a descriptive statistical analysis of the valid sample data of 253 formal questionnaires. From the time of establishment of the company, the highest proportion is the establishment of more than 10 years, 112 companies, accounting for 44.27 %; followed by the establishment of 5-10 years of enterprises, 80 companies, accounting for 31.62%; 1-5 years, 61 companies, accounting for 24.11%. From the perspective of the nature of corporate property rights, most of the sample is private enterprises, with 176 companies, accounting for 69.57%; followed by state-owned and state-controlled companies, with 51 companies, accounting for 20.16%; there are 17 in the sample Sino-foreign joint ventures accounted for approximately 6.72%; other property rights accounted for 3.56%. This study divides the scale of manufacturing enterprises from two aspects: the number of employees and annual sales. In terms of annual sales, large-scale manufacturing accounts for 38.74% of the total, while small and medium-sized enterprises account for 61% of the total. In terms of the number of employees, there are 103 large-scale manufacturing companies with more than 1,000 employees, accounting for 40.71%. The descriptive statistics summary of the sample is shown in Table 3 below:

Table 3. Descriptive statistical analysis of the sample

Dimension	Options	Sample size	Percentage
Established	1-5years	61	24.4%
	5-10years	79	31.52%
	More than 10 years	115	44.52%
Nature of property rights	State-owned and state-controlled	56	
	Private Enterprise	52	20.15%
	Foreign-funded enterprise	156	69.45%
	Other	15	72%
Number of workers	20 people or less	102	56%
	20-299 people	26	78%
	300-999 people	28	11.56%
	More than 1000 people	54	26%
Annual sales	Less than 3 million	10	40.78%
	3 million-20 million	31	12.56%
	20 million-400 million	52	21.55%
	More than 400 million	72	29.62%

(2) Confirmatory factor analysis

The basic objectives of confirmatory factor analysis and exploratory factor analysis are similar. They are both explaining the covariation or correlation between measurement variables. Confirmatory factor analysis is a sub-model of structural equations, which is a special kind of structural equation model analysis. The confirmatory factor analysis of this study adopts AMOS21.0, and the measurement variables and corresponding dimensional indicators are estimated with great relief to do confirmatory factor analysis, as shown in Figure 7:

Through the above confirmatory factor analysis, the factor loading (λ) and combination coefficient can be obtained from the output result of AMOS21.0, and then use the following formula to calculate the measurement error, combination reliability (CR) and average variation extraction with the help of EXCEL Value (AVE), the results of aggregate validity analysis are shown in Table 4:

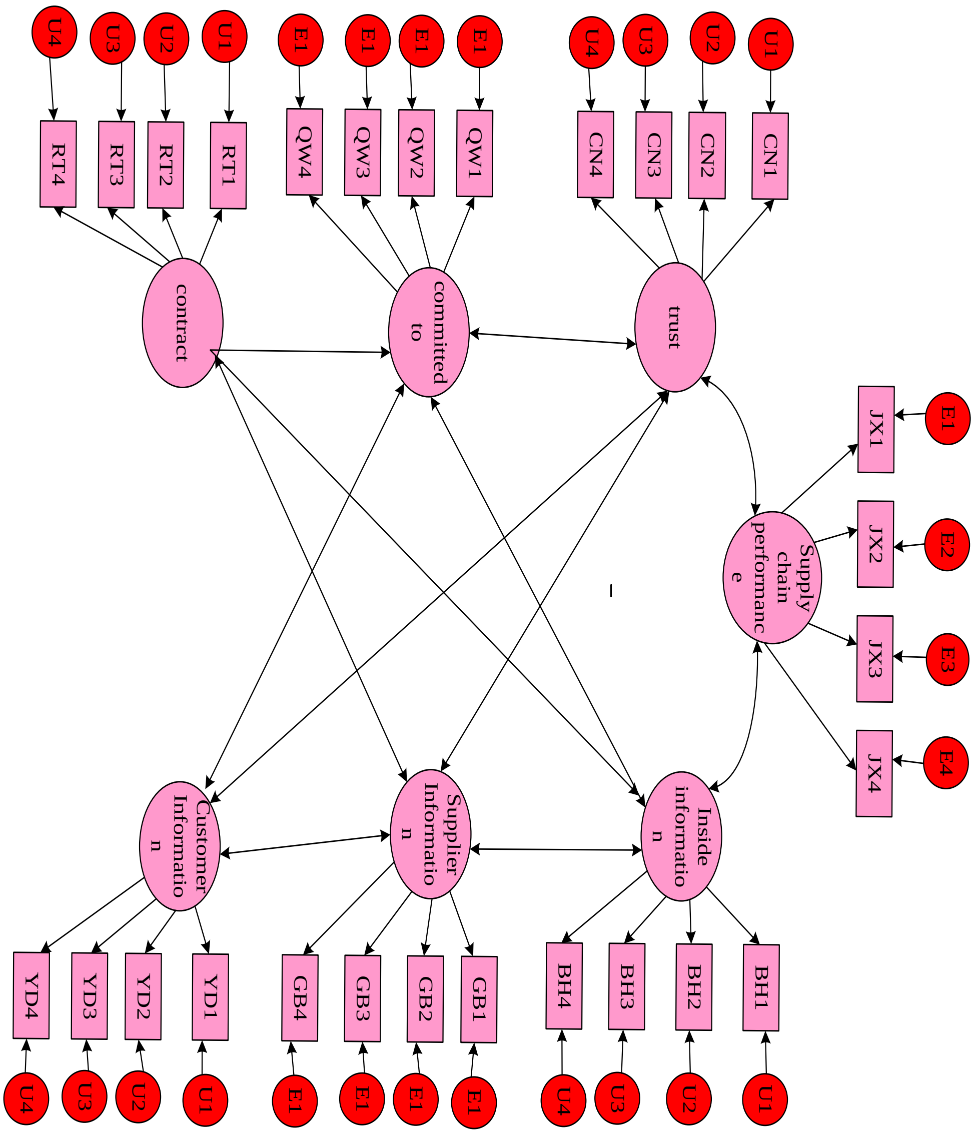

Figure 7. Confirmatory factor analysis diagram of measured variables

Table 4. Convergent validity analysis results of confirmatory factor analysis

Measurement item	Factor loading λ	Reliability coefficient	Measurement error	Combination reliability CR	Mean variation draw value AVE
JX1	0.763	0.4	0.497	0.895	0.987
JX2	0.836	0.503	0.26		
BH1	0.865	0.55	0.63	0.569	0.875
BH2	0.879	0.546	0.51		
YD1	0.754	0.59	0.525	0.754	0.869
YD2	0.745	0.87	0.562		
GB1	0.723	0.95	0.456	0.569	0.745
GB2	0.823	0.554	0.586		

Professor Wu Minglong (2010) pointed out that the value of the confirmatory factor load should be greater than 0.5. The closer to 1, the more the indicator reflects the characteristics of the construct. In addition, the reliability coefficient of individual measured variables in the model is higher than 0.5, indicating the inherent model The quality is good. It can be seen from Table 4 that all factor loadings are greater than 0.5, indicating good internal consistency of the variables; the reliability coefficient of most measurement items is greater than 0.5. If the reliability coefficient of individual indicators is greater than 0.5, the internal quality of the model is good. In addition, for the test of convergent validity, the average extraction value of variance (AVE) and the combined reliability (CR) are the two most important indicators. If AVE is higher than 0.5 and CR is higher than 0.7, it indicates the convergent effect of the model. Degree is good. It can be seen from Table 4 above that the AVE values are all above 0.5, and the CR values are all higher than 0.8, so it can be considered that the convergent validity of the model is good.

5. Conclusion

The rapid development of technologies such as Internet+ and big data has brought a huge impact on the collaborative management model of supply chain information. How supply chain companies can screen out information management technologies that fit their own needs, quickly tap the hidden value of massive amounts of data, and make full use of and coordinate various resources have become an important means for companies to flexibly respond to and quickly respond to customer needs. As the development trend of the supply chain, information coordination management is an effective means for the supply chain to adapt to the changes of the times and achieve synergistic benefits by improving the data processing process and accelerating the seamless connection of all links by using the existing information coordination technology. In this paper, through model analysis and other methods, with the blockchain as the innovation point, the traditional supply chain information collaboration system has been deeply analyzed and discussed, and a blockchain-based supply chain information collaboration system has been constructed, further demonstrating the importance of blockchain. Optimize the applicability and advancement of the supply chain information collaboration system.

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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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