

Research Article

New Business Form of Smart Supply Chain Management Based on “Internet of Things + Blockchain”

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As the digital economy promotes economic growth, the Internet of Things can solve the problem of productivity, and the blockchain can solve the problem of production relations, which realizes the industrial transformation of blockchain smart contract technology and becomes a new driving force for the industry. It is becoming more and more difficult for companies to control their own raw material supply, production, and sales by relying only on their own strength, and this is the key to influencing a company to become bigger and stronger. This problem will be efficiently solved by the implementation of “Internet of Things + Blockchain” technology. As a result, research into a new sort of smart supply chain management based on “Internet of Things + Blockchain” is required. From the perspective of building a smart supply chain, this paper makes full use of literature data methods, theoretical analysis methods, case analysis methods, logic analysis methods, and other methods. To study the effectiveness of IoT and blockchain technology through case study of changes in the order quantity in the procurement link of the supply chain. By understanding the current status of related research at home and abroad, as well as the Internet of Things technology and blockchain technology, this paper analyzes China. The main problems existing in the supply chain management of enterprises are the combination of the Internet of Things technology and the blockchain with the enterprise supply chain to create a smart supply chain platform, and the feasibility and functional efficiency of the smart supply chain platform. The related check was found, its deficiencies were found, and remedial measures were taken. The research results show that this intelligent supply chain management platform based on the Internet of Things (IoT) and blockchain can make the operation of the entire supply chain clearly visible. Information and data sharing can be achieved among the various departments of the supply chain to achieve scientific management and precision of the enterprise prediction. And this model can also be used in other industries to achieve industrial upgrading.

1. Introduction

Since the 1980s, with the rapid development of society and economy, China’s manufacturing-related companies have encountered some of the same problems. The relationship between upstream and downstream supply chains is

unstable, and there is a relationship of distrust between employees and between superiors and subordinates. Companies rely on their own strength to supply, produce, sell, and recycle raw materials for their products. The control of links becomes more and more difficult, but these links determine the economic benefits and development of an

enterprise [1]. With the improvement of the level of science and technology, the Internet of Things technology will realize the information sharing in the process of production and circulation in the supply chain, including the results of the network relationship formed by upstream and downstream enterprises of products or services and end-user activities. As a result, in order to address the issue of product supply, production, sales, and recycling, a number of companies have begun to strategically collaborate with them to address the issue [2]. For this reason, there has been the formation and research of “enterprise supply chain and supply chain management” [3]. At the same time, the IoT market is rapidly expanding, and its applications are becoming more prevalent [4]. The widespread use of IoT technology can help businesses collect relevant information from within and outside the industry more quickly, easily, accurately, and in real time, allowing them to improve supply chain management and efficiency, putting them in a better position to compete in a competitive market. As a result, it is more important than ever to investigate the impact of IT technology on supply chain management, as well as how businesses select which IT technology is best for their own development [5]. In China, as early as 1999, research on the core technology of the IoT sensor network technology was started, and its research and development level is also in the forefront of the world [6]. Blockchain is a relatively advanced innovative technology at present. It integrates the Internet of Things, big data, artificial intelligence, and other information technologies to promote integrated innovation and integrated applications. Therefore, the Internet of Things is only the supporting part of the blockchain. In 1999, the Chinese Academy of Sciences made a series of research results in the fields of wireless sensor networks and modern communication technologies, which provided solid infrastructure support for the development of the IoT in China [7]. In 2003, the “New Logistics Information Technology-CEP Seminar on IoT and Product Electronic Codes and the First Joint Conference on New Logistics Information Technology” was held in Beijing. After the meeting, the results will increase the support for research on the IoT and step up research-related technologies of the IoT [8]. China’s Golden Card Engineering Office applied RFID (radio frequency identification) technology to the Golden Card Project in 2004 as a key task of the electronic money information proposal [9].

In early August 2009, during the inspection in Wu xi, Premier Wen Jilbab of the State Council proposed that “in the fierce international competition, China’s sensor information center or “sensing China” center should be established quickly” [10]. To accelerate research and support for the IoT industry, it is necessary to build a “perceived China” center in Wu xi and to develop the IoT as an important strategy for China’s future social and economic development [11]. In October 2010, the R & D and application of the IoT industry was one of the important contents of the 12th Five-Year Plan [12]. In March 2012, in the government work reports of the two sessions, the IoT industry was clearly identified as a national strategic emerging industry [13]. This demonstrates that the Chinese government places a high

value on the growth of the IoT industry, and the industry has reached a stable stage of development. Blockchain is a technology that has exploded in popularity in recent years. Its comprehensive scientific technology, including distributed data storage, point-to-point transmission, consensus mechanisms, encryption algorithms, and other computer technologies, will bring animal networking to its unique advantage. Once again, related companies at home and abroad have also begun to apply sub-technology to their supply chain management [14].

In order to improve the management level of the availability chain, this paper establishes an intelligent supply chain management platform that can support the Internet of Things and blockchain. Among them, Marcin Staniek introduced the characteristics of enterprise provide chain intimately and discovered the importance and practicability of good provide chain management platform [15]. Realize door-to-door logistics services by researching a project. In this article, M. Nair and D. Sutter pointed out that blockchain technology plays a great role in improving the efficiency of business cooperation in the economic field [16]. Aiming at the problems existing in traditional logistics, L. Lin expounded the development of agricultural logistics in the Internet environment to promote the development of agricultural logistics [17]. J. Potts and E. Rennie introduced blockchain technology and outlined its significance in cultural and creative industries applications [18]. J. Bergquist et al. developed a transaction workflow called PETra for problems arising in the operation of electrical distribution systems [19]. Yinqiu Liu planned the appliance of blockchain technology in enterprise offer chain management and therefore the answer of common issues. Naveed Ul Hassan proposed the specific construction process of a smart supply chain management system using blockchain technology, which is very useful for the establishment of a target system. Nair analyzed the impact of blockchain technology on the efficiency of enterprise management, especially in terms of supply chain management efficiency. Lin proposed that the IoT technology has a profound impact on logistics, which can greatly improve the efficiency of the transportation link in the enterprise supply chain. Ason Potts proposed the application of blockchain technology in the smart supply chain management platform, showing the important role of blockchain technology in supply chain management. These studies still have certain limitations in some areas and need to be improved.

In short, this article takes the system of Lenovo’s intelligent supply chain management platform supporting the Internet of Things and blockchain as the analysis content, that is, (1) by understanding the supply chain management model and existing problems of enterprises, (2) understanding the enterprise supply chain management optimization decisions and the IoT and district Block-chain technology, in turn, combines the IoT and block-chain technology with enterprise supply chain management to create a smart supply chain management platform based on the IoT and block-chain. The majority of the analysis content in this text is divided into five halves: the first half is the introduction, which aims to review the majority of

the analysis content in this text from the analysis background, analysis purpose, analysis ideas, and methods; the third half is the theoretical foundation, which is an in-depth and systematic outline. The third part is to summarize the current status and existing problems of supply chain management in Chinese enterprises, analyze the causes of the issues, summarize the ways in which to optimize the provision chain management, and construct the optimization objective performance. The fourth is to use relevant theories and optimization methods of enterprise quotation chain management to establish an intelligent quotation chain management platform that supports the Internet of Things and blockchain; the fifth is the summary of the research results of this paper, and also the prospect of the intelligent quotation chain management platform. Develop a reasonable supply chain management platform through the Internet of Things, and provide the Internet of Things and blockchain for small and medium-sized enterprises to check the practicality of the intelligent supply chain management platform.

2. Proposed Method

2.1. Research Method

2.1.1. Theoretical Analysis Method. Through the collection of massive information, an intelligent quotation chain management platform supporting the Internet of Things and blockchain is established. Before it's applied in the following, it is subjected to an outsized variety of theoretical calculations and numerical simulations elaborate theoretical analysis of dependability, safety, etc.

2.1.2. Case Analysis Method. In order to additionally check the feasibility and effectiveness of the applying of the net of Things and blockchain technology in enterprise offer chain management, case analysis and analysis square measure conducted on completely different things within the past and also the current application of net of things and blockchain technology in enterprise offer chain management offer theoretical support for building a a lot of comprehensive management platform.

2.1.3. Logical Analysis Method. Through the analysis of the relevant literature and data, the in-depth analysis of specific research content and problems is made by using logical analysis methods such as induction, analysis, and comprehensive summary in the writing process.

2.2. Definition and Nature and Classification of the IoT. The definition of the Web of Things technology is completely a different reception and abroad. It is usually believed that the Web of Things relies on normal communication protocols and incorporates a distinctive net address worldwide (each object incorporates a distinctive virtual temperament operative in space). That is, the future IoT will link the only identifiable items with their virtual representations on the

Internet. These virtual representations can provide appropriate and accurate information and can be accessed at the right time in terms of their quantity, price, and location. Foreign scholars believe that the IoT is synonymous with ubiquitous computing, Internet Protocol (IP), intelligent embedded devices, communication technologies, specific applications, everyone or all, things-to-things dynamic networks, and the technologies on which it depends and methods. Domestic scholars believe that the IoT is an extended and expanded network developed on the basic information networks such as the Internet. It uses information sensing equipment (such as RFID and EPC) to connect objects in the real world to the Internet through an information exchange platform according to a prepacked agreement, so that information between objects can be exchanged and communicated to achieve intelligent tracking, positioning, and the purpose of monitoring management.

Regarding the character of the net of Things, the net of Things technology could be a comprehensive info technology, of that the net is that the foundation and core of the net of Things, and also the Web of Things could be a new technology developed from the net. The Internet may be a terribly essential transmission path and application process link for the net of Things. The fundamental attributes of the net of Things, within the end, are to be able to reach communication and affiliation between things and things, folks and things, folks and folks through a spread of ways and ways while not being restricted by time and place. Computing, analysis and process, and property of application eventualities are the basic attributes of the net of Things in keeping with this characteristics of the net of Things itself, and the net of Things may be divided into personal Web of Things, shared Web of Things, community Web of Things, hybrid Web of Things, medical Web of Things, and building network.

2.3. Concept and Classification of Supply Chain and Structure. The basic concept of supply chain can be traced back to logistics, which originally represented the army's logistics and supply activities during the war. Later, due to the development of the economy, especially the continuous development of business activities, the supply chain gradually integrated into business. As for the concept of supply chain, scholars at home and abroad are different. Foreign scholars generally believe that the definition of the supply chain includes all the activities related to the production, processing, warehousing, transportation, distribution, and other activities related to the product, from the supplier of the product supplier to the customer of the customer who purchased the product. Domestic scholars generally believe that the supply chain uses network information technology to integrate supply chain partners located in different regions and different divisions of labor in a large area, and through mutual risk sharing and benefit sharing between various enterprise organizations and other mechanisms to jointly obtain economic benefits.

As for the classification of the supply chain, because the supply chain has many characteristics and covers a wide range, in addition, its own structure and various environments are different, so the supply chain can be classified according to different standards. According to the areas included in the supply chain, some supply chains only include the flow of value chains between relevant departments within the enterprise, that is, the internal supply chain. Some supply chains include a wide range, including upstream- and downstream-related companies and end customers in the supply chain, that is, the external supply chain. According to its existence environment and the stability of its own structure, it can be divided into dynamic supply chain and steady-state supply chain. In addition, it can be divided into reactive supply chain, effective supply chain, logistics service supply chain, cost-driven supply chain, and so on.

Regarding the basic structure of the availability chain, the standard supply chain structure model focuses on the value circulation mode of enterprise intervals, from the acquisition of raw materials to the assembly and conversion of semi-finished products and finished products, and finally to customers through distributors. With the more enlargement of the availability chain theory, the scope of the availability chain has step by step enlarged. Suppliers, wholesalers, retailers, customers, etc., have formed a whole network chain relationship around core enterprises. At this stage, firms not solely concentrate on themselves, however conjointly attach a lot of importance to strategic partnerships between enterprises, and acknowledge the importance of strategic partnerships between firms within the provide chain. By establishing strategic partnerships, they will build operational management and work a lot of totally effective.

3. Experiments

3.1. Related Processing of Experimental Data. There is an excessive amount of production management knowledge to be processed during the trial, and there should be inaccuracies in this knowledge. It is also critical to deal with errors appropriately. As a result, before applying these experimental knowledge for forward and reverse analysis, the error should be processed and appraised using the original knowledge. There are three types of experimental knowledge errors in general. Random errors, for instance, are usually caused by random variables and have irregular signs and absolute values. Random errors, on the other hand, are assumed to be more uniformly distributed as the number of investigations grows. A major gaffe is referred to as a “gross error.” The gross error primarily refers to the fact that, within applied mathematics knowledge, the observation error does not adapt to an exact arrangement rule, which is sometimes a mensuration error. Errors caused by measuring instruments, changes in measuring datum, and the influence of external conditions are called commands. Then, the hypothesis is formed by the probability distribution characteristics of the observed values, and the judgment is formed by the comparison between the actual calculated values and quantifier values. Look at some of the most common methods, u , variance, T , etc. Gross errors are

removed from the measurement method, and program lines are removed or weakened so that the observed values contain only random errors $I, 0$.

The least amount sq. methodology is commonly used to process experimental data both at home and abroad. The least quantity sq. approach is based on the assumption that the observations include only minor flaws. This cannot possibly be true. As a result, a whole new theory of systematic and gross errors has been devised. The further parameter approach is currently the simplest strategy for process systematic errors; there are mainly two ways to handle this errors. The first is the information detection technique, which is also a statistical approach, and the second is the technique of robust estimation, which is distinct from the smallest amount squares technique. In addition, in the actual supply chain operation, all the links related to production are dynamic, and the management platform system is also in a mobile state, which means that the supply chain of the whole enterprise is dynamic, which makes the error used in the past experiment indeed a form of deviation. The experimental errors assessed are indeed unavoidable and uncertain.

3.2. Experimental Conditions. China’s market economy started late and its development time was short. There is currently a gap between management and production levels of large foreign companies, especially in the supply chain. Chinese enterprises have begun to apply technologies such as the IoT to enterprise supply chain management later, and the time is too short, so there are still many problems at present. At present, the relevant technologies used by Chinese manufacturing enterprises in supply chain management mainly include bar code technology, point-of-sale terminal POS machines, computer network technology, location code identification technology, and so on. As far as the application level of bar code technology is concerned, China’s manufacturing enterprises have generally adopted bar code technology, but the raw materials in warehousing and freight have to be stored in the warehouse, but the transportation unit is a transport unit composed of sales units for transportation. When arriving at the warehouse, when the warehouse is going to be stored, because the transport unit does not have a bar code identification, radio frequency identification cannot be performed, and the transport unit needs to be disassembled one by one or manually ordered by the staff, which brings a lot of inconvenience to the warehouse management work, not only increasing. It has not only reduced the labor cost, but also reduced the storage efficiency. In addition, it has also increased the manual error rate, which has brought considerable losses to the enterprise. In the application of bar code technology by the enterprise, another important role is reflected in the transportation. As the transport unit generally does not have a bar code identification, it will affect the tracking and real-time monitoring of the goods by the enterprise, which will bring great difficulties to the trace ability of the product due to quality problems.

In addition, in terms of computer network technology, most manufacturing companies in China now use computers for product design, raw material procurement, production process optimization, and warehouse management. However, due to the imperfect data acquisition system (sensor equipment, RFID technology, etc.), the information sharing platform as a data exchange platform between enterprises and users has not been established, so the sharing, transparency, and integrity of information are low. All these restrict the further play of the huge role of information technology in manufacturing supply chain management. Article location code identification technology is the basis of EDI electronic data interchange. Electronic data exchange is a new supply chain management information technology method. In accordance with unified normative principles, a high degree of automated information collection ensures accuracy and improves product electronic information from one network port to another to achieve exchange efficiency improvement. The item location code identification technology is to use a uniform normative code to identify the actual item and to track the position of the item in circulation. It can be used in the operation and circulation of raw materials, semi-finished products, and finished products in manufacturing enterprises to improve the real-time tracking and monitoring of product information and realize trade cycles and information sharing. Can greatly improve management efficiency with reduced manpower input. However, the current status of the use of location code identification technology by manufacturing enterprises in China is not optimistic. More than 90% of enterprises do not use location code identification technology. China's location code identification standard (GB16828) has not been popularized in enterprises.

Chain enterprises among Chinese production enterprises lack supply chain management coordination departments. As a result, enterprises have low levels of participation in provide chain management that has junction rectifier to a unified adjustment of supply, capital flow, info flow, and business flow within the provide chain management. It is solely answerable for product getting, circulation, storage, and transportation in a very straightforward sense. In touching the institution of the availability chain management department of China's producing enterprises, the dearth of analysis standards and incentive mechanisms of the availability chain management department square measure necessary constraints. Additionally, it is still comparatively late for the idea of the blockchain to flow into China; however, China has developed o.k. in info technology like the net of Things and blockchain. Therefore, overall, the experimental condition squared measure is acceptable.

3.3. Experiment Object and Equipment. The purpose of this experiment is to build an intelligent supply chain management platform that supports IoT and blockchain, and provides technical support for the availability chain management platform system of small and medium-sized enterprises in China. The intelligent offer chain management

platform supported the net of Things, and therefore, the blockchain established during this article principally uses the net of Things sensing and identification technology and is the net of Things' primary knowledge source. Knowledge sources are some of the most commonly utilized technologies. Sensing technology embeds sensors around or on an object, collects information about the thing or the surrounding atmosphere, and detects a variety of physical and chemical changes. Sensing element technology, frequency identification technology, and other lesser-known technologies are examples. The sensing element (English name: electrical) is a device that detects changes in the environment. The sensing element (also known as an electrical device or a sensor) is the major source of data for the IoT. Sensing the current data of the measured object, translating the observed data into electrical signals or other types of data, and then outputting the data to satisfy the demands of knowledge transfer, storage, processing, recording, display, and management are all possible. According to the national standard GB7665-87, a sensing element is "a device or gadget that may detect a specific measurable object and convert it into a useable signal per a definite rule, sometimes consisting of sensitive components and conversion components."

Wireless communication has become the fastest-growing and most widely utilized communication strategy in recent years, thanks to the increasing usage of mobile communication systems (such as mobile phones, tablets, and other devices). It sends data from one location within a region area to another using electromagnetic radiation signals. To comprehend wireless information transfer, the most common technologies are made up of wireless communication devices that are connected to a variety of supported communication standards. Within the network, the communication terminal communicates by accessing the network and counting on the network. Consistent with the means of accessing the network, it is divided into 2 types.

4. Discussion

4.1. Impact Analysis of the IoT and Blockchain on Each Link of the Supply Chain. The intelligent supply chain management platform is to establish network relationships around the core enterprises for the suppliers, wholesalers, retailers, and customers of the product, and to track all activities related to the product, such as production, processing, warehousing, transportation, and distribution. Simulate the impact of the IoT and the blockchain on each link of the supply chain using the established intelligent supply chain management platform based on the IoT and the blockchain, and use the simulation results to investigate the impact of the IoT and the blockchain on each link of the supply chain. The three key aspects of raw material procurement in supply chain management are price, quality, and time. Compared with traditional procurement, supply chain procurement in the IoT environment has certain improvements in these three aspects, enabling enterprises to reduce production costs (raw material costs) and guarantees through the supply chain management information platform under the participation of IoT technology. Product quality and timely production

oriented to customer needs will greatly improve the market competitiveness of enterprises. After applying the Web of Things and blockchain to the acquisition method of producing corporations, the acquisition method of provide chain corporations has been improved, as shown in Table 1.

The data in Table one reflect that when adopting the intelligent offer chain management platform supported the Web of Things and therefore the blockchain, electronic orders have increased by nearly 50% compared to the original order volume, and the order completion rate is far greater than the original supply chain model. This shows that it is very effective in applying the IoT and blockchain technology to the supply chain procurement of enterprises.

First of all, the key IT technologies in the transportation process include wireless communication equipment, radio frequency identification technology, GPS devices, and sensor equipment. All the participating vehicles and cargo information are scanned into the IT information system through RFID tag identification and scanned as the basic data. First, the transportation department will enter the waybill instruction requirements into the IT information system. The system will automatically formulate the optimal vehicle arrangement and route selection, and generate the estimated time of arrival based on the destination information, vehicle information, and cargo information. After getting confirmation, the system will automatically transmit the transportation instructions to the vehicle and the corresponding warehouse where the goods are delivered, so that the vehicle is loaded at the first time, and the destination customer can reasonably arrange the time of receiving the goods. Applying IoT and blockchain technology to supply chain management to improve transportation efficiency and save time, the time required for transportation is shown in Figure 1.

From the data in Figure 1, it will be seen that once adopting the intelligent provide chain management platform supported the Web of Things and blockchain, the transportation time has been saved by five hundredth, the delivery time has been reduced from 1.5h to 1h, and the unloading time is shortened from 2 h to 1 h, saving half the time. In addition, through comparison and analysis with the information of the basic database, the anomaly of stolen or lost goods is immediately detected and reported to be handled. Ambient temperature, humidity, and pressure have a great influence on special commodities, such as medicines and fresh food.

The impact of the net of Things and blockchain on the assembly and process of enterprise offer chains is additionally varied, and the main impacts are as follows. The first is the vitalization of product testing. Usually, a product is designed by a designer and then goes through a series of tests before it goes on sale. Today, this management platform can visualize product testing, which will greatly save material and financial resources. The key technologies of the IoT applied to the production line operation are RFID technology and electronic tag technology, which can greatly improve the level of automated operation of the production line. Through the automatic setting of the IoT, human error can also be effectively avoided. The time period observation of the assembly line by the net of Things will understand the

TABLE 1: Analysis of change in supply chain purchasing link.

Name	Number	Increment
The original order	2500	20
Electronic order	3754	1754
Original completed order	2300	100
New completed order	3754	1854

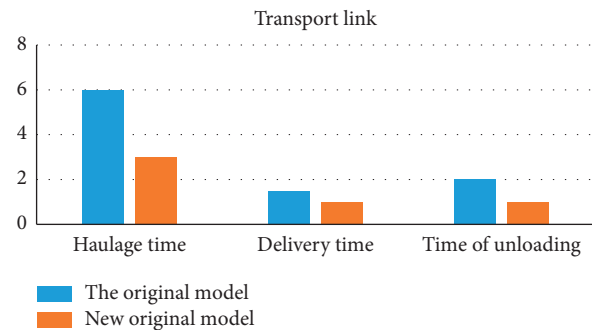


FIGURE 1: Changes in time required for transportation.

issues and proper errors within the 1st time. Through the automatic adjustment of production equipment, the IoT not only saves manpower time but also avoids human error. Have a positive impact on enterprises to improve production efficiency. The data on the impact of production are shown in Figure 2.

It can be seen from Figure 2 after adopting the intelligent supply chain management platform, the impact of the production stage in supply chain management is also obvious. Among them, the production time of the product was saved by 50%, and the production efficiency was improved by nearly 15%. In general, this management mode based on the IoT and blockchain is far stronger than the previous production chain management mode.

4.2. Impact of IT and Blockchain on Customer Value in the Supply Chain. In a buyer-led market, reducing customer costs has become an important means of increasing customer value. The application of the IoT can improve the value of customers and reduce the total cost of customers from the aspects of reducing customer payment costs, convenience costs, and opportunity costs. This transaction mode reduces the number of transaction links, reduces the large transaction costs of the intermediate transaction process, and is more suitable for the customer's personalized needs. Customized differentiated product production can increase customer value on the basis of reducing transaction costs. Improved customer satisfaction in turn increased the competitiveness of production companies in the product market. Specific data to reduce customer costs are shown in Table 2.

As can be seen from Table 2, in today's market dominated by buyers, reducing customer costs has become an important means of increasing customer value and increasing customer sources. Under this kind of management mode based on the IoT and blockchain, no matter from the

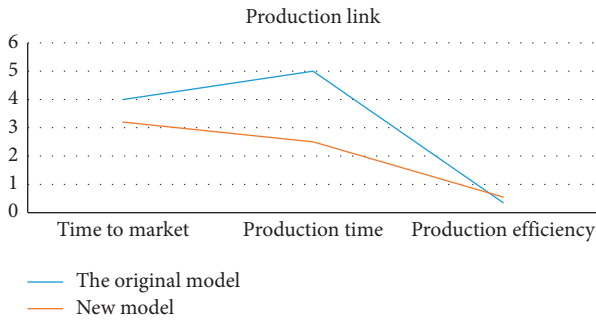


FIGURE 2: Each link in the production chain saves time.

TABLE 2: The impact of the new management model on customer costs.

Cost type	The original model	New model
Pay the costs	1625	1500
Convenient and cost	520	400
Opportunity cost	78	50

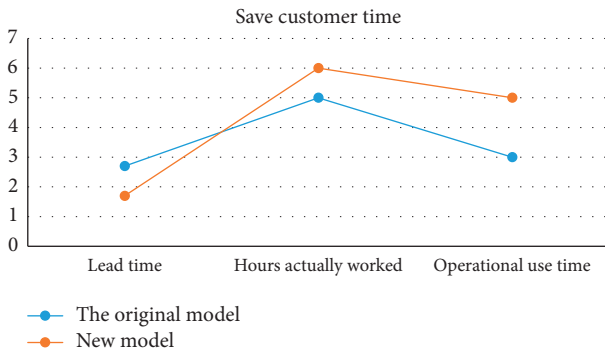
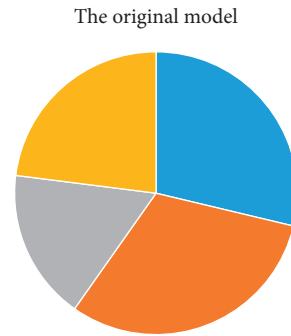


FIGURE 3: Customer cost savings under the new model.

three aspects of customer’s payment cost, convenience cost, and opportunity cost, it greatly reduces the cost of the customer and increases the value of the customer.

The role of the IoT in saving customers’ time is mainly reflected in reducing the “lead time.” Opposite to “lead time” is “actual working time.” In the entire supply chain process of manufacturing companies, there is a large amount of lead time: waiting caused by bottleneck processes on the production line, lead time caused by excessive control and batch processing, nonvalue-added activities on the production line, repeated actions by workers, and the “lead time” wasted due to avoiding production risks caused by uncertain factors. Actually, the effective working time in the whole process activities of the supply chain only takes a small proportion. Specific data to save customers’ time are shown in Figure 3.

As can be seen from Figure 3, under the new management mode, the lead time can be reduced by about 1 h, the actual working time is increased by 1.2 h, and the effective working time per day has increased by 50%. Applying the IoT to supply chain processes can reduce waste caused by lead time, enable intelligent supply chain management, and optimize and improve supply chain business processes.



Product value, People value, Value of identity, Service value

FIGURE 4: Improve customer transfer value under the new model.

In modern supply chain management, companies also need to reduce production and sales costs as much as possible, increase the value of customers’ transfers, and then increase the number of customers. Under the new supply chain management platform, customers’ transfer value will be greatly improved. The specific data are shown in Figure 4.

As may be seen from Figure 4, the dependability of the judgment safety index is split into four indexes, of that the conventional index accounts for twenty second. These indexes are a unit terribly effective for deciding the dependability of the protection issue. Reliable safety factors dominate the implementation of the designed observance and early warning system that is crucial for systematic observance of changes in high-slope environments.

5. Conclusions

- (1) This article analyzes the common issues existing within the provide chains of domestic enterprises, discusses these issues while not resolution them, and proposes corresponding solutions.
- (2) Introduced the net of Things technology and blockchain technology, and combined the net of Things technology with enterprise offer chain management to ascertain a full offer chain together with product acquisition, storage, transportation, production, distribution, and after-sales service sensible management platform.
- (3) This paper plans to carry out corresponding technical and theoretical guidance to solve the related problems of supply chain management.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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