



## Driving Digital Marketing Success International Trade Supply Chain Management in the Era of Big Data and Internet of Things

Yunting Tuo<sup>1\*</sup> 

<sup>1</sup>Zhengzhou Railway Vocational & Technical College, Zhengzhou 450000, China  
[tuo\\_yunting@outlook.com](mailto:tuo_yunting@outlook.com)

Corresponding author: Yunting Tuo, [tuo\\_yunting@outlook.com](mailto:tuo_yunting@outlook.com)

**Abstract.** With the continuous evolution of the era of data science and intelligent IoT, the research on the cost of e-commerce enterprises in international trade is getting more and more in-depth. In international trade-related enterprises, the supply chain is the third source of interest, and its cost control is directly related to the company's income. The 21st century is an information age. In the information age, cost management is no longer limited to the interior of the enterprise, but aims to reduce the cost of the entire supply chain. With the continuous development of big data and Internet of Things technology, the research on cost control of enterprises is getting more and more in-depth. On this basis, enterprises can realize real-time decision-making, accurate forecasting, optimize cost management, realize rational allocation of resources, improve the efficiency of operation and management, so as to reduce the cost of each link in the supply chain and improve the overall competitiveness. This paper first takes the relevant theoretical knowledge of big data and supply chain cost management as the starting point, takes e-commerce enterprises as the research object, analyzes from the internal and external perspectives, and proposes the corresponding international trade supply chain cost reduction strategy, which can provide e-commerce Enterprises provide references for thinking and decision-making in supply chain cost management, thereby promoting the development of e-commerce enterprises.

**Keywords:** big data; e-commerce enterprise; supply chain; cost management; Digital Marketing Success

**DOI:** <https://doi.org/10.14733/cadaps.2024.S4.186-197>

## 1 INTRODUCTION

### 1.1 Big Data

Since the data itself has no value or is of very low value, there is no unified conclusion on the analysis of it by different users[13]. Literally speaking, big data is a large amount of data, and new

information is stored dynamically in real time[7]. However, with the development of information technology today, "big data" is no longer just "quantity", but has more meanings. For such massive data, traditional database software can no longer conduct in-depth research, and data collection, storage, and analysis all require dedicated big data technology to process[5]. Therefore, the deep meaning of "big data" refers to the use of special big data processing tools to summarize, organize and organize a large amount of information[6]. Analyze it to get information that is beneficial to the company's development. The characteristics of big data include several directions, the first is scale[18]. Big data is a huge set of data whose size cannot be measured by traditional data[15]. So far, there is no instrument that can independently complete the collection, storage and analysis, which also reflects the comprehensiveness and inclusiveness of the data from the side[4]. Next is diversity. Data describe a certain thing or law from different angles. The other is high speed. The rapid flow of data and the dynamic change of data, with the passage of time, the environment is constantly changing, and the data is also increasing. This is a quick change[14]. Also includes value meaning. Data collection has become an emerging resource and an important competitive advantage. However, the data itself does not have any value. Its holders must deeply dig and analyze the information in order to find the true value of the information and apply it to their own development[1]. The current application of big data technology in international trade mainly includes three directions, as shown in Table 1.

<i>Num</i>	<i>Application direction</i>
<i>1</i>	<i>Consumer Needs Analysis</i>
<i>2</i>	<i>Supply Chain Cost Analysis</i>
<i>3</i>	<i>Trade transaction security analysis</i>

**Table 1:** Application of big data in international trade.

## 1.2 Internet of Things

With the rapid progress of communication network technology, the speed of network transmission continues to accelerate, and the information exchange technology of the Internet of Things has also developed rapidly. In recent years, countries have increased their funding and manpower, committed to the research and development of new IoT technologies, and actively seized the commanding heights in the fields of standards, technologies and applications[9]. IoT technology mainly connects objects through various sensors and electronic devices[2]. In this regard, this technology has been included in the national medium and long-term scientific and technological development plan by our country[17]. Nowadays, the domestic Internet of Things communication technology is mainly aimed at some domestic high-performance main control chips in the field of Internet of Things[24]. At the same time, a large number of development platforms have been established, and specialized technologies and standards are carried out on this platform[22]. Experts predict that the Internet of Things will be widely used in the next 10 years. It is widely used in intelligent transportation, environmental protection, public security management, fire prevention, equipment monitoring, care for the elderly, medical and health and other fields[19]. With the rapid development of big data in the Internet of Things and the rapid increase in data volume, people urgently need to continue to develop and improve on the basis of the original database and data processing technology, so as to reach a new level in the field of information technology development[21]. The scale of China's Internet of Things industry has grown from 489.6 billion yuan in 2013 to 2 trillion yuan in 2023[16]. With the iterative development of artificial intelligence, big data, cloud computing and other technologies, the ultimate development goal of the Internet of Things is "intelligent connection of all things". Now there is also the transformation of the Internet of Things through AI technology[11]. AI analyzes and processes the data collected by the Internet

of Things, which further improves the user experience and greatly changes the way of life of human beings[8]. The application of Internet of Things technology to supply chain management is mainly to mark the status of goods in the supply chain. The specific application method is shown in Table 2.

Equipment type	Application direction
<i>RFID tags</i>	<i>Supply Chain Cargo Marking</i>
<i>RFID reader</i>	<i>Supply Chain Goods Identification</i>
<i>Sensor</i>	<i>Cargo Status Awareness</i>

**Table 2:** Application of Internet of Things in Supply Chain Management.

## **2 THE STATUS QUO OF SUPPLY CHAIN COST MANAGEMENT OF INTERNATIONAL TRADE E-COMMERCE ENTERPRISES**

The high supply chain cost of e-commerce companies in international trade has become a headache for many e-commerce companies [10]. From the procurement and production of front-end raw materials to the sales and circulation of the back-end, there will be costs in every link in the middle, and it is these costs that increase the operational pressure of various companies in the supply chain.

First of all, at present, the supply chain procurement cost of most enterprises has the phenomenon of information distortion [20]. Since the annual procurement work is mostly based on previous procurement work experience, ignoring the market demand, and the staff in each link have different control over the market situation, it is difficult to reflect the actual market situation after the processed data. This leads to the procurement cost of the enterprise. In addition, the quality of purchased materials is not guaranteed. At present, most enterprises still regard price as the only purchase standard in the procurement process, and it is difficult to guarantee the quality of materials.

Secondly, inventory is an important link in enterprise cost control and must be paid attention to. Awareness of the entire supply chain is missing in inventory management. Inventory management is the foundation of a company's good operation. Good inventory has low cost and can effectively promote various business activities of the company. The inventory management of some enterprises cannot achieve information sharing with other departments, which leads to the failure of the enterprise's inventory management [3].

The third is the lack of consideration of the actual needs of customers in the production process. The main audience of e-commerce companies are customers. Due to changes in the market environment and continuous changes in customer needs, if production and R&D remain stagnant without innovation, the cost of production and R&D will increase invisibly.

Fourth, there is a lack of precise division of the market in the sales process. The market advantages of e-commerce companies are mainly manifested in the fact that they have acquired a large number of potential consumers through online transactions, which requires specialized segmentation to better meet the needs of consumers. However, the vast majority of enterprises do not specifically segment their own markets, the efficiency of information processing and utilization is not high, and it is difficult to establish a good reputation and brand image in the market, which affects the cost control of the entire sales process [12]. Have a great impact.

Finally, the relationship maintenance between upstream suppliers and downstream customers in the supply chain is ignored. Whether it is upstream or downstream customers, we are an overall operating system. We only focus on our own development and ignore changes in the surrounding external environment, which is not conducive to the development of an integrated supply chain. Frequent replacement of suppliers will increase transaction costs and procurement costs, shortage costs caused by insufficient supply of goods, etc., and insufficient attention to consumers will increase relationship costs, driving up marketing costs and market research costs [23].

### **3 PROBLEMS EXISTING IN SUPPLY CHAIN COST MANAGEMENT OF E-COMMERCE ENTERPRISES**

#### **3.1 Analysis of Internal Supply Chain Cost Control**

##### *3.1.1. There are defects in the post setting and responsibilities of the procurement link*

Under the current economic situation, many companies will formulate some procurement systems, but those systems are all on paper and have not been implemented at all. When purchasing, there will often be a problem that a position is not clear, and there may even be one person holding multiple positions. Phenomena, if there is no effective management, this method will be used to save manpower, but it will cause greater losses without knowing it. For scattered purchases, most companies do not have strict review procedures. The price of one purchase is relatively cheap, but if purchased continuously, the price will be relatively high, so it is easy to appear when purchasing. A case of cheating. In addition, in the procurement stage, due to the lack of a complete performance appraisal mechanism, the performance of the procurement department's employees, standardized business capabilities and their own salary levels cannot be well integrated, which has a negative impact on cost control in the procurement process. unfavorable. Finally, in the context of big data, companies must share information in a timely manner and control their procurement costs to a certain extent.

##### *3.1.2. The sales link is not professional in market segmentation*

Under the premise of implementing supply cost control, there must be a clear target market and customers. However, in the current situation, domestic e-commerce companies have not yet clearly divided the market, and there are more product types and businesses. It is complex. Although it covers many fields, it is only superficial. It has not yet formed its own unique products, and the products are not very different. They are not competitive, and it is not conducive to cost control. In the stage of commodity sales, due to the lack of active understanding of downstream product demanders, there are defects in the division of the consumer market. Their sales strategy is very simple and traditional, mainly publicity. The company prefers to invite celebrities to advertise. If this is done, the cost will be higher, and there will not be much difference between the products, so the marketing is also important. Not so good.

##### *3.1.3. Inventory link does not realize sufficient and effective information sharing*

Under the current economic conditions, enterprises have not yet established a scientific, comprehensive and dynamic management system, which is not perfect, and the information sharing ability is not comprehensive, so it is impossible to effectively share the internal information of the enterprise, because the efficiency of information sharing Very low, it is easy to cause the blind storage of raw materials and commodities of the enterprise, while ignoring the quantity of its own inventory and the commodities purchased. In this case, it will not only increase the cost of inventory, but also reduce the management level of inventory. This is also common in domestic e-commerce companies. Too much inventory will not only increase the inventory management costs, but also occupy the company's funds, resulting in an increase in capital costs.

#### **3.2 Analysis of External Supply Chain Cost Control**

##### *3.2.1. Supply chain cost control lacks long-term effect*

The competition among enterprises in the future will be the competition between supply chains. More and more companies realize that it is difficult to develop sustainably on their own. In order to gain a foothold in this complex social environment, they must establish a complete, close-knit, and interrelated industry through cooperation with upstream companies. Chain, so as to survive in this

complex social environment. Logistics, information flow and capital flow are the main components in the supply chain. Among them, from raw material suppliers to customers is logistics, information flow contains various information conditions, and capital flow is every link in the circulation process. Supply chain cost management refers to the integrated management of the three major processes in each link of the supply chain, each node enterprise, from suppliers to sellers, and finally to users. Its primary goal is to deliver certain products required by customers to reasonable locations in a timely manner in appropriate quantity, quality, and normal condition. The core idea of the theory is to reduce costs through every link in the supply chain. This method looks for the strategic connection of each key node enterprise from the whole supply chain, reduces the resource waste within the enterprise to some extent, and makes its overall work efficiency reach the best.

### *3.2.2. Insufficient emphasis on customer relationship maintenance*

There are all kinds of strange products on the market, and consumers can have many choices. An e-commerce company must do everything possible to attract customers' attention and make customers feel good about their products. But now, many e-commerce companies have not focused on this point, nor have they invested corresponding manpower, material resources and funds for system management and maintenance. If there are no corresponding measures to ensure this, then users will be given Bringing an illusion of being ignored, causing consumers to reduce their stickiness to the product and their experience with the product, which in turn leads to the loss of customers, which will also increase the relationship cost of customers to a certain extent.

## **3.3 Cause Analysis of Supply Chain Cost Management Problems**

### *3.3.1. Lack of supply chain information sharing platform*

Since the focus of the company's development is business development, the management of the information system is not perfect enough, the enterprises in the supply chain have not formed a more complete communication platform, and the lack of the concept of strategic cooperation and mutual trust between enterprises makes all members Enterprises cannot be interdependent and cannot exchange supply and demand information in real time, resulting in information lag and distortion, which affects the mutual understanding and communication of various enterprises, and due to the untimely information transmission in the supply chain, resulting in related problems. rising costs. On a global scale, due to changes in market demand, the production process of enterprises has also undergone corresponding changes, which requires enterprises to establish an efficient and fast information platform to strengthen the informatization of the supply chain. The information management of the supply chain is of great significance to the logistics organization of enterprises, the improvement of production efficiency, and the guidance of marketing methods. Using information technology, it is possible to realize supervision across time and space, and to network with suppliers and users on the Internet, so as to achieve real-time monitoring of the market. Big data and other information technologies have broken through geographical restrictions, realized the connection with users, and provided enterprises with excellent opportunities to develop personalized products and implement flexible production.

### *3.3.2. The supply chain management process fails to innovate*

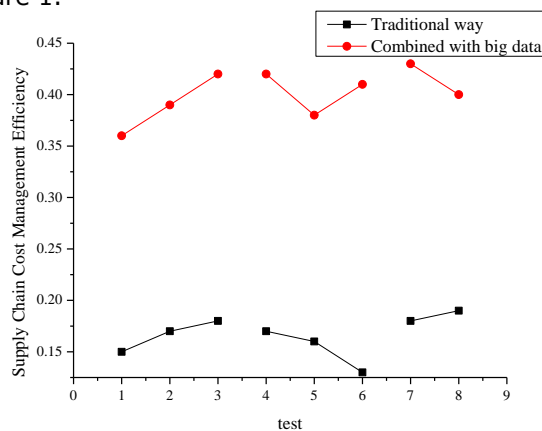
In the big data environment, enterprises can use the open R&D sharing platform to share information with retailers according to market needs. The R&D and production departments can even develop new products based on the feedback information to improve the consumer experience and reduce the number of products. Manufacturer's production and research costs. Using big data technology, establish an inventory management system, use big data to predict the demand and inventory of various products, so as to achieve the best storage of raw materials and finished products. According to the needs of customers, the use of big data analysis technology enables companies to more easily

obtain the required market segmentation data, improve the accuracy and reliability of sales, and optimize and reduce unnecessary costs to the greatest extent. The development of big data has promoted the transformation and upgrading of consumers, making the information on both sides of the supply and demand more transparent, and the needs of consumers more personalized. The demand for small batches, multiple batches, and immediacy has become the mainstream of consumption. R&D and production must be user-centered, and quickly make adaptive changes according to user needs, so that consumers have more choices.

## 4 OPTIMIZATION OF SUPPLY CHAIN COST MANAGEMENT OF E-COMMERCE ENTERPRISES UNDER THE BACKGROUND OF BIG DATA AND INTERNET OF THINGS

### 4.1 Application of Big Data in Cost Management

Enterprise cost management refers to various expenses incurred during the operation of the enterprise, mainly including: procurement expenses, production expenses, marketing expenses and after-sales service expenses. A large amount of data and information will be generated in various production and economic activities of the enterprise, and the cost of the enterprise will be effectively controlled by means of information technology such as big data, and various data generated in the various production processes of the enterprise will be collected reasonably, and Use professional information technology software for analysis to quantify cost data information. Big data can play a role in the entire supply chain cost management process, in which historical cost data needs to be used for cost forecasting in advance forecasting; in-process control, we need to collect corresponding data, then process and analyze the data, and apply the data The center and the big data platform communicate data to achieve the effect of real-time monitoring of cost data; finally, compare and analyze the standard cost predicted in advance with the actual cost of each link and the actual total cost after the event, find out the problem, and finally realize the whole supply Optimization and improvement of chain cost management. Through the optimization of supply chain costs using big data technology, the efficiency of international trade supply chain management has been greatly improved, as shown in Figure 1.



**Figure 1:** Cost management efficiency of international trade supply chain after combining big data.

### 4.2 Optimization of Internal Supply Chain Cost Management

#### 4.2.1. Cost management optimization in the production process

In the context of the continuous development of international trade, consumer behavior has changed, and consumer demand has also changed. This requires e-commerce companies to focus

on the actual needs of customers and realize small batches and multiple batches. Timely supply. The research and development and manufacturing of enterprises must be customer-oriented, respond quickly according to customer needs, and develop products suitable for the market, thereby reducing ineffective investment in research and development costs. In the era of big data, enterprises can use the open R&D sharing platform to share information with retailers in order to meet market needs, and retailers use massive data to analyze and summarize customer preferences, materials, performance, etc. Then the R&D sharing platform transmits the information to the upstream commodity manufacturing enterprises, and the commodity manufacturing enterprises develop products in a timely manner according to the transmitted information, ultimately improving the user experience of consumers and reducing their production and R&D costs.

The big data averaging method is to predict the data of a certain period, and use historical data to add weights to calculate and predict. The calculation formula is(1) - (5):

$$\mathbb{A} = \left\{ A \mid \sum_{n=1}^N \hat{A}_n \leq M, I(A) \in \{0, K\} \right\} \quad (1)$$

$$\pi^* = \arg \max \lim_{T \rightarrow \infty} \mathbb{E} \left[ \sum_{t=1}^T \gamma^{t-1} U(S(t), A(t)) \mid S(1) \right] = \arg \min \lim_{T \rightarrow \infty} \mathbb{E} \left[ \sum_{t=1}^T \gamma^{t-1} \Delta(t) \right] \quad (2)$$

$$G_n(t) = t - 1 - T_n(t) = t - 1 - \max\{t_0 \mid Y_n(t) = 1, t_0 < t\} \quad (3)$$

$$G_n(0) = 0, X_n(0) = 0, e_n(0) = E_n, \forall n \in N_k, k \in K \quad (4)$$

$$P(Y_k(t) = 1) = \prod_{k=1}^K P(Y_n(t) = 1) = \prod_{k=1}^K \left( 1 - \prod_{n=1}^{N_k} \left( 1 - \prod_{n=1}^{N_k} P(Y_n(t) = 0) \right) \right) \quad (5)$$

Taking an international trading shoe manufacturer as an example, the semi-annual sales of a certain type of shoes of the company are shown in Table 3.

<i>month</i>	<i>actual sales</i>
1	82
2	88
3	104
4	96
5	110
6	100

**Table 3:** Semi-annual sales of a certain shoe of the enterprise.

Using the big data prediction method designed above, the amount of shoes to be produced in the later stage is predicted as shown in Table 4.

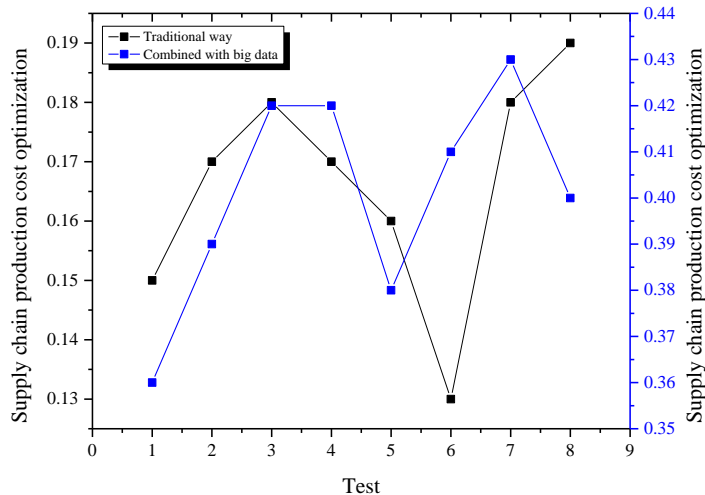
<i>month</i>	<i>forecast sales</i>
7	83.1
8	82.3



9	81.5
10	81.2

**Table 4:** The amount of shoes that international trading companies need to produce in the later stage.

Through the investigation of international trade companies using big data technology, it is found that the changes in the production cost optimization of the supply chain after combining big data are shown in Figure 2.



**Figure 2:** Optimization of supply chain production costs after combining big data.

#### 4.2.2. Cost management optimization in procurement and inventory

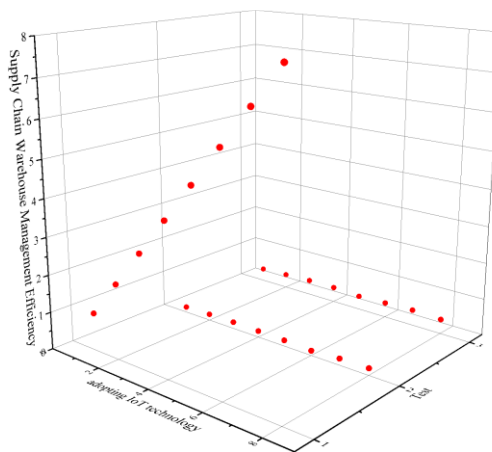
Combined with the Internet of Things technology, it is possible to compare procurement and inventory in a timely manner. RFID is a key technology for the application of the Internet of Things to the supply chain, and has the potential to have a huge economic impact on many industries. Although RFID is a relatively old technology, recent advances in chip manufacturing technology have made RFID practical for new applications and settings, especially consumer-grade labeling. RFID systems consist of readers and tags. A typical system also has several readers fixed or mobile, and many tags attached to objects. The reader communicates with the tag via wireless range and gathers information about the tagged object. RFID technology brings many advantages over existing barcode technology. RFID tags can be embedded in items rather than barcodes required for physical exposure, and can use radios to detect radio frequency (RF) signals. Communication based on radio frequency signals also improves the read range of radio frequency identification tags. Furthermore, barcodes contain only basic information about the product's manufacturer and manufacturer information about the object itself; however, RFID is particularly useful in applications where items must be uniquely identified. Putting RFID technology on international trade goods can track the movement of the company's goods and changes in the total inventory in time, and adjust the procurement strategy in time.

In recent years, a major change has taken place in the concept of procurement management of enterprises. The idea of controlling procurement costs of enterprises has also changed from controlling the unit price to achieving the lowest total cost in the entire procurement process. In this



way, procurement is no longer just a procurement process. The work of the department is a collaborative process of suppliers, procurement, production and sales. Therefore, it is very important to build a good supplier relationship. On this basis, the company should also reduce the cost of inventory and ensure on-time supply, thereby strengthening the management of the supply chain. Generally speaking, it is very difficult for enterprises to achieve 100% zero inventory. In order to reduce the cost of inventory, the procurement department, production department, and sales department must carry out ABC classification of the purchased raw materials, and determine the required purchase quantity according to different purchase quantities. Inventory changes are roughly divided into four stages: demand forecasting, receiving management, warehouse management, and delivery.

Big data analysis, mining and platform opening allow personnel from procurement, sales and other departments to participate in the process to accurately predict the demand for inventory, and use radio frequency identification technology and EPC electronic label technology to improve the efficiency of goods in and out of the warehouse. Thereby reducing storage costs and labor costs, so that inventory costs can be effectively controlled. The efficiency of supply chain warehouse management after adopting IoT technology is shown in Figure 3.



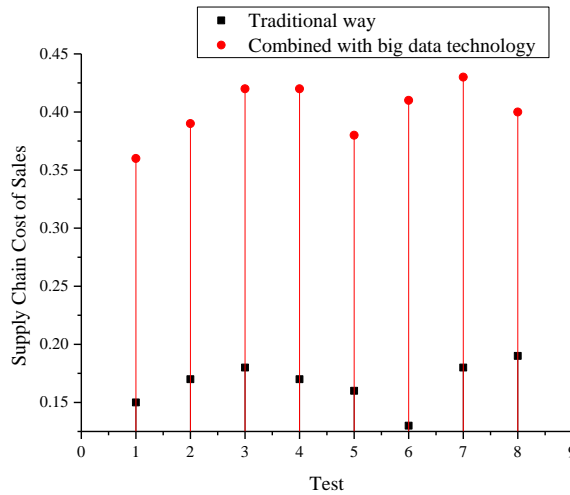
**Figure 3:** Supply Chain Warehouse Management Efficiency After Adopting IoT Technology.

#### 4.2.3. Optimization of cost management in the sales link

Sales expenses are mainly research and marketing costs. The use of big data can effectively improve the accuracy and reliability of sales, and fundamentally reduce unnecessary expenses. The goal of optimizing cost management in the marketing process is to reduce marketing costs and R&D costs. In the era of big data, the use of big data is to reduce unnecessary expenditures to the greatest extent. According to previous market research, combined with external and external data, it is mined and analyzed to achieve effective cost control and provide information for product pricing. Decision basis. First of all, use big data analysis and mining technology to predict the sales market, optimize products and services, and develop products that suit the individuality of consumers through consumer research to achieve flexible and precise marketing to reduce the cost of marketing links.

Secondly, according to the needs of customers, using big data technology, it is easy to obtain market segmentation data, understand factors affecting prices, products, services, consumption habits required by the market, etc., thereby reducing manpower and time consumption, and more Conduct market research effectively. In the era of big data, enterprises and other platforms, live

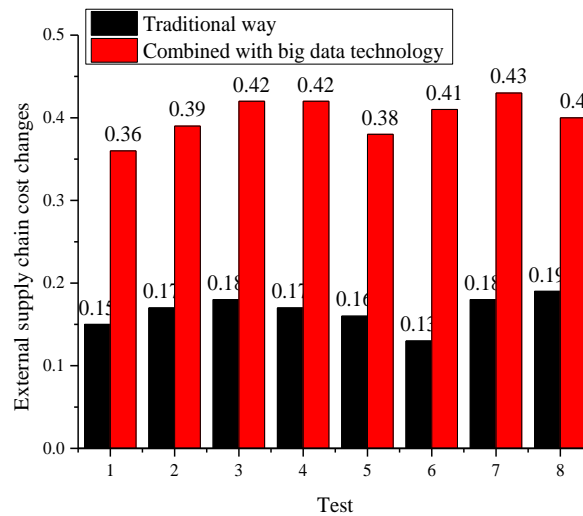
broadcast platforms, self-media, etc. carry out brand promotion and promotion, strengthen instant communication with customers, understand customers' real needs, connect businesses, products, services, and information together, and expand sales. Increase sales volume, revitalize sales stock, and ensure the smooth progress of marketing work through effective control of production and operation costs, manpower, resources and other costs. In addition, due to the development of big data technology, the sales channels of domestic manufacturing products are also quietly changing. In addition to supplying to various agents, they have also established their own e-commerce platform to reduce the cost caused by the intervention of third parties. sales commission. The supply chain sales cost combined with big data technology is shown in Figure 4.



**Figure 4:** Supply chain sales cost combined with big data technology.

### 4.3 Optimization of External Supply Chain Cost Management

Purchasing from the perspective of the supply chain must establish a strategic relationship with suppliers based on cooperation and mutual trust. Through a large amount of data, analyze the qualifications, reputation, product quality, and stability of supply of suppliers, and establish long-term strategic partnerships with them. In this way, the transaction cost and procurement cost increased due to the replacement of suppliers can be saved, and the shortage cost caused by insufficient supply of goods can be avoided. Strengthen the management of suppliers by establishing a supplier evaluation system. On this basis, manufacturers can use big data technology to accurately find high-quality suppliers and establish long-term strategic partnerships with them to ensure the stability of supply channels and the high quality of goods. Get the goods that meet the supplier's requirements within a short time, so that the production will not be interrupted and the work efficiency will be improved. Through the establishment of a supply chain management information platform and the use of big data technology to make the relationship between manufacturers and upstream suppliers, downstream retailers and consumers closer, the value concept of cooperation and win-win has been established, the coordination ability of the supply chain has been enhanced, and the reduction of It reduces the internal loss of the enterprise and improves the resource allocation of the supply chain. Through supply chain collaboration, the sharing of supply chain information is realized, thereby enhancing the overall value and competitiveness of the enterprise. Enhance the responsiveness of the entire supply chain and truly create a "win-win chain" for e-commerce companies. Through the investigation of international trade companies using big data technology, it is found that the cost changes of the external supply chain after combining big data technology are shown in Figure 5.



**Figure 5:** Changes in external supply chain costs after combining big data technology.

## 5 CONCLUSION

In the era of big data, big data technology can effectively reduce the internal and external supply chain costs of enterprises. Through the implementation of external supply chain data management, this paper strengthens the communication with upstream suppliers, makes it visualized with upstream suppliers, and uses big data technology to perform accounting, thus forming a good cooperative relationship. In-depth supply chain cooperation within the enterprise can reduce procurement, out-of-stock, and information costs; sales forecast in the sales link saves sales costs; production costs are saved through information sharing in the production link; in terms of warehouses, warehouse intelligence is realized and reduce warehouse costs. The effective supply chain cost management of e-commerce enterprises should be based on big data, establish a big data cost control system, establish a big data cost control plan, and strengthen the operation and management of big data, so as to improve the competitiveness of the entire supply chain. This paper studies the application of big data in supply chain cost management, including the application in the whole cost management, and the optimization of the operation process of production, procurement, inventory and marketing by using big data, so as to realize the cost optimization of the whole supply chain. reduce. Supply chain visibility and collaboration: Digital marketing platforms and technologies can facilitate the sharing of real-time data and information within the supply chain. This enhanced visibility allows for better collaboration and coordination among suppliers, manufacturers, distributors, and retailers. By leveraging digital communication channels, such as collaborative project management tools, enterprise social networks, and supply chain management systems, organizations can optimize the flow of information, reduce communication costs, and enhance overall supply chain performance

YuntingTuo, <https://orcid.org/0009-0000-9189-1440>

## REFERENCES

- [1] Editorial Office.: Exploration of digital transformation of supply chain management, Construction Enterprise Management, (03), 2022, 92-93.

- [2] Fei, Z.: Research on intelligent logistics supply chain management under the Internet of Things, *China Logistics and Purchasing*, (16), 2022, 91-92.
- [3] Heyu, W.; Xia, Fan,.L; Sun, Siliang.: Application of big data analysis in supply chain management of feed enterprises, *China Feed*, (22), 2022, 95-98.
- [4] Hui, C.: Smart supply chain management and application based on Internet of Things, *Electronic Technology and Software Engineering*, (23), 2021, 3-4.
- [5] Huwei, S.; Lingling, S.: Analysis of intelligent logistics supply chain management mode under the Internet of Things, *Industry and Technology Forum*, 20(15), 2021, 196-197.
- [6] Jiaqi, W.: Supply chain management optimization based on the Internet of Things, *Market Weekly*, 34(08), 2021, 12-13+25.
- [7] Jie, S.: Analysis of the application of Internet of Things technology in supply chain management, *Shanghai Business*, (07), 2021, 90-91.
- [8] Jieying, M: Talking about enterprise supply chain management and optimization in the era of big data, *Marketing World*, (24), 2022, 17-19.
- [9] Jing, W.: Application of Internet of Things in supply chain logistics management, *Time-honored Brand Marketing*, (09), 2022, 164-166.
- [10] Jingbo, F.: Analysis on the path of low cost strategy in logistics supply chain management, *Logistics Engineering and Management*, 44(12), 2022, 43-45+28.
- [11] Jun, Y.: Analysis of supply chain cost management of e-commerce enterprises under the background of big data, *Internet Weekly*, (01), 2023, 23-25.
- [12] Jun, Y.: Analysis of supply chain cost management of e-commerce enterprises under the background of big data, *Marketing World*, (21), 2022, 96-98.  
<https://doi.org/10.1155/2022/7818944>
- [13] Lijun, W.; Heng, W.; Wei, H.: Application of Internet of Things identification technology in supply chain management, *China Information Technology*, (06), 2021, 105-106.
- [14] Ling, G; Weiwei, D.; Ling, L; Bin, T.; Rui, L.: Research on military supply chain management based on IoT network, *National Defense Science and Technology*, 42(06), 2021, 99-104.
- [15] Man, X.: Innovation of intelligent logistics supply chain management path based on the development of Internet of Things, *Modern Business*, (33), 2021, 12-14.
- [16] Mengsha, Z. : Research status of the application of big data capabilities in supply chain management, *China Storage and Transportation*, (02), 2023, 119-120.
- [17] Qiyu, C.: Research on intelligent logistics supply chain management under the Internet of Things, *China Market*, (23), 2022, 133-135.
- [18] Tingting, Y.: Research on intelligent logistics supply chain management based on Internet of Things, *Marketing World*, (33), 2021, 56-57.
- [19] Weilin, Z.: Application practice of Internet of Things and information communication technology supply chain security management, *Digital Technology and Application*, 40(12), 2022,141-143.
- [20] Xiaofeng, L.: Research on reengineering of supply chain management process based on big data, *China Storage and Transportation*, (12), 2022, 132-133.
- [21] Xiaomei, M.: Countermeasures for the construction of logistics park supply chain integrated management platform based on Internet of Things technology, *Logistics Engineering and Management*, 45(01), 2023, 36-38.
- [22] Xin, W.: Discussion on intelligent logistics supply chain management under Internet of Things Technology, *Shanghai Business*, (12), 2022, 55-57.
- [23] Yiwen, Z.: Research on cost control of textile enterprise supply chain from the perspective of big data, *Heilongjiang Textile*, (04), 2022, 45-47.
- [24] Yuxue, J.: Talking about the new tools of modern logistics and supply chain management based on the Internet of Things, *China Logistics and Purchasing*, (22), 2022, 92-93.