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Retraction

Retracted: Cross-Border E-Commerce Platform Logistics and Supply Chain Network Optimization Based on Deep Learning

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope

(2) Discrepancies in the description of the research reported

(3) Discrepancies between the availability of data and the research described

(4) Inappropriate citations

(5) Incoherent, meaningless and/or irrelevant content included in the article

(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] H. Guo and T. Zou, "Cross-Border E-Commerce Platform Logistics and Supply Chain Network Optimization Based on Deep Learning," *Mobile Information Systems*, vol. 2022, Article ID 2203322, 10 pages, 2022.

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Research Article

Cross-Border E-Commerce Platform Logistics and Supply Chain Network Optimization Based on Deep Learning

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E-commerce and logistics are symbioses with each other, but cross-border e-commerce (CBEC) still cannot break away from cross-border logistics. With the progress of economic internationalization, economic and trade ties around the world have become closer and closer, and the level of international business exchanges has been improved. The rise of multinational e-commerce has also caused unprecedented difficulties to multinational logistics and supply chain management. The application of deep neural networks in various fields provides opportunities for cross-border e-commerce platforms to solve these problems. The existing logistics distribution model cannot keep up with the development of CBEC and has become a constraint and bottleneck for the development of CBEC. Therefore, this article introduces deep learning neural network to cross-border logistics and supply chain based on the analysis of the existing cross-border logistics model and supply chain model and the status quo of e-commerce development. It optimizes the existing cross-border logistics and supply chain network in order to break through the current bottleneck in the development of CBEC. This paper shows through research that introducing deep learning neural networks into CBEC logistics and supply chain can improve the efficiency of logistics and supply chain. Compared with the previous efficiency, the efficiency of network optimization can be increased to about 50%, reducing the cost of cross-border logistics and supply chain. The research in this article has great theoretical and guiding significance for the development of CBEC.

1. Introduction

At present, CBEC is developing rapidly, but cross-border logistics has become a constraining factor for CBEC. Although with the standardization and quality development of CBEC, related service companies have gradually formed a specialized division of labor and complementary advantages under the organization and guidance of integrators. A CBEC service logistics supply chain is characterized by collaborative integration and service innovation. However, cross-border logistics is slow in time, high in cost, corresponding after-sales service, lag of information exchange, and other problems that have not been effectively solved [1]. At the same time, deep learning neural networks are widely used in various fields. This also brings some effective enlightenment to cross-border logistics and supply chain. Is it possible to apply deep learning neural networks to the logistics and supply chain of CBEC platforms to change the current bottleneck in the development of CBEC? This achieves the simultaneous development of CBEC and cross-border logistics, enables cross-border logistics and supply chain to achieve network optimization, and improves the efficiency of cross-border IoT, and the supply chain is one of the current research hotspots.

This paper applies deep neural networks to CBEC platforms to optimize cross-border logistics and supply chain research, which can change the dilemma of e-commerce platform development. This enables the innovation of e-commerce platforms and the development of healthy and green cross-border logistics. This article aims to improve the problem of slow timeliness and high cost of cross-border logistics, in order to improve the distribution efficiency of cross-border logistics and reduce the cost of cross-border logistics, and promote the further development of CBEC. It

improves cross-border electricity supply; improves the ability of cross-border electric business platform of the supply chain management, contributing to the brand effect; improves the marketing ability of the platform; implements cross-border electricity in the production and circulation of commodities of green development; changes traditional trade form, and implements different products and services, promoting cross-border market at the heart of the economic development status and efficiency [2].

In order to improve the distribution efficiency of cross-border logistics and reduce the cost of cross-border logistics, as well as to realize the green and healthy development of the supply chain, many scholars have carried out in-depth research on the logistics and supply chain of CBEC platforms. Among them, Zhang H analyzes all aspects of the CBEC logistics process based on big data processing technology. He built a standardized and modular logistics optimization platform and used logistics networks as an example to verify its effectiveness. This provides reference and guidance for further improving CBEC logistics technology. Although Zhang's research combined big data technology, it failed to achieve the healthy development of the supply chain [3]. Sun P proposed the construction of cross-border e-commerce logistics supervision system based on internet of things technology. Through experiments, the proposed cross-border supervision system is safe and controllable. In addition, e-commerce logistics protect the privacy of users and data and can prevent forgery and fraud [4]. Ene S established a multiobjective optimization model to determine the network design of the green supply chain. This model can be used as a strategic decision-making tool to solve problems with multiple goals and conflicts [5]. His research has a certain guiding significance for the optimization of the supply chain of CBEC, but it lacks theoretical support. Zheng et al. analyzed the coordination mechanism of supply chain finance in B2C CBEC. He proposed the use of a reputation mechanism to link the credit repayments of upstream manufacturers with the credit lines of financial institutions. And he believes that the reputation mechanism can increase the chance of contract performance, thereby solving the problem of SCF default caused by information asymmetry [6]. Although his research can improve some of the problems in the supply chain, it still fails to improve the efficiency of the supply chain. Due to the explosive growth trend of CBEC, Yan W conducts research on the supply chain from the perspective of decision-making and coordination. He used the Shapley value method and the full-cooperative income incremental sharing mechanism to redistribute profits under different cooperation modes, in order to provide a scientific decision-making reference for domestic CBEC companies to rationally choose cooperative relations [7]. His research is very novel but lacks the support of theoretical data. Therefore, this article will optimize the CBEC platform logistics and supply chain on the basis of their research to improve the problems in cross-border logistics and supply chain.

This article has the following innovations in the research of CBEC platform logistics and supply chain: (1) it applies a deep neural network to cross-border logistics and improves and optimizes the network based on the original cross-border logistics model, thereby improving the efficiency of cross-border logistics and reducing the cost of cross-border logistics; (2) it applies the deep neural network to the supply chain service segment of the CBEC platform to improve the slowness of the service end of the supply chain in contact with customers, and provide the timeliness of the response; and (3) the deep learning neural network is integrated into supply chain management, and the unsupervised autonomous learning ability of the deep learning neural network is utilized to optimize the logistics transportation and inventory management ability in the supply chain.

2. CBEC Platform Logistics and Supply Chain Network Optimization Methods

2.1. Deep Learning Neural Network. Deep learning is a new concept proposed relative to shallow learning. Bringing it into the CBEC platform logistics and supply chain is to apply the deep learning neural network to the cross-border logistics and supply chain. The deep learning neural network model can effectively improve the efficiency of cross-border logistics, reduce the cost of cross-border logistics, and promote the healthy and green development of the supply chain of CBEC platforms. The proposal of a deep neural network naturally cannot leave the research on the human brain, so the deep neural network is based on the human brain. It can also be widely used in medical, transportation, business, and other fields. The generation and application of deep neural networks are shown in Figure 1:

Deep learning is a technology in the field of machine learning. It is generated through the study of the human brain. The purpose is to make it close to the human brain and stimulate the human brain to deal with various affairs, so as to acquire new knowledge or skills and reorganize the existing knowledge structure to continuously improve its own performance [8]. Therefore, applying deep learning networks to cross-border logistics and supply chains can make logistics and supply chains more intelligent and precise. Deep learning neural network is a multilayered framework. It adds a hidden layer on the basis of the BP nerve, which can enhance the learning ability of the deep learning model. Therefore, in cross-border logistics, when the deep learning model is used in the logistics model, it can operate in accordance with specific instructions internally to improve the efficiency of logistics and supply chain. The network structure of deep learning is shown in Figure 2.

The deep learning neural network originated from BP neural network. It realizes the establishment of a deep learning network through the superposition of RBM layer by layer. Each RBM is a probabilistic generative model, which restricts input and output data through RBM. To realize the adjustment of the weights of the deep learning network, the probability model of any RBM is

$$R(g, f) = \frac{j^{-E(g,f)}}{K}. \tag{1}$$

In the structure diagram of Figure 2, the middle layer is the hidden layer of deep learning. If the input is defined as g

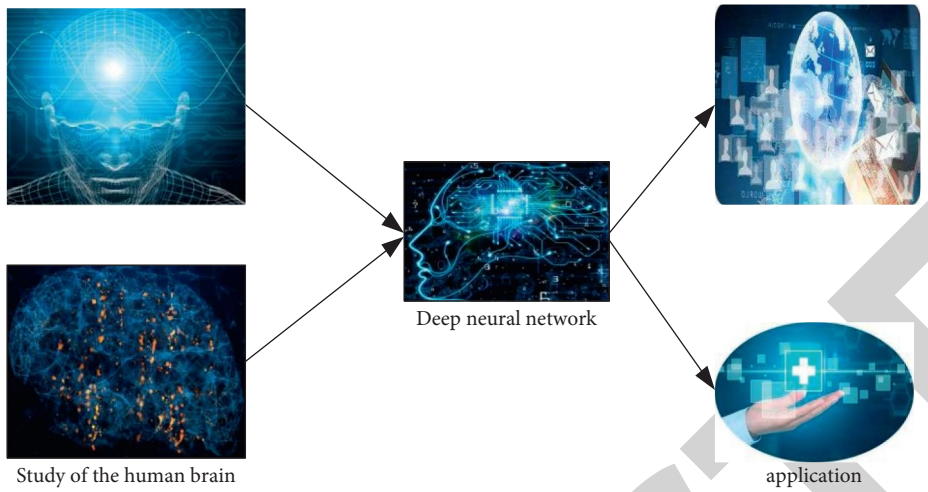

Figure 1: The generation and application of deep neural networks.

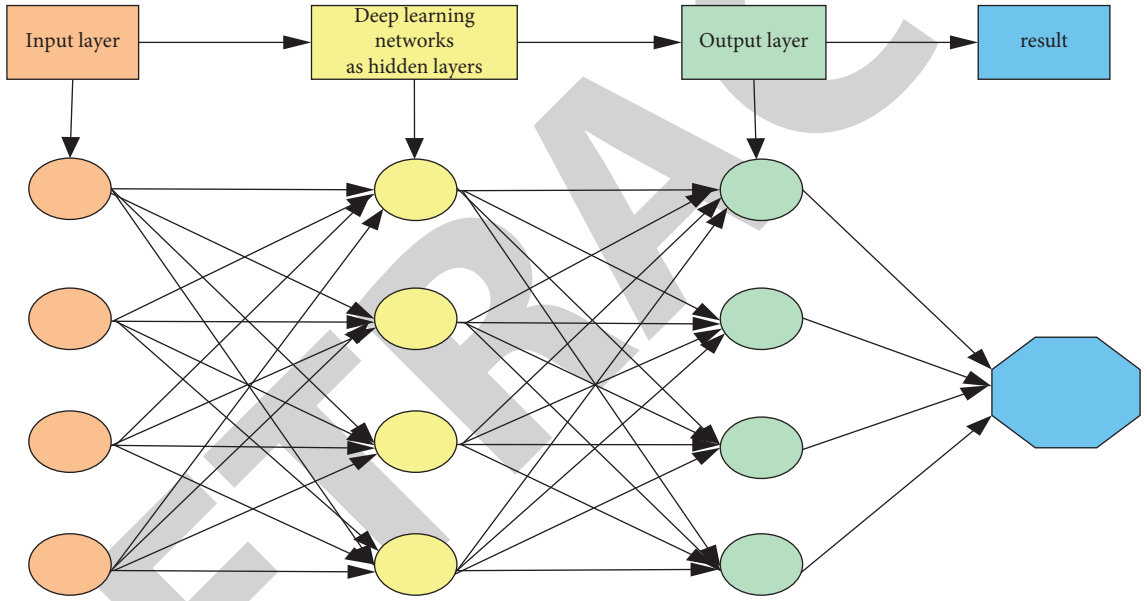

Figure 2: Network structure diagram of deep learning.

and the output is defined as f, the connection weight between the input layer and the hidden layer is represented by d. The bias is expressed by x and t, and $Q(g, f)$ is defined as the relationship function of this neuron. The normalization factor is K; then the relationship between K and the relationship function $Q(g, f)$ can be expressed as follows:

$$\begin{aligned} Q(g,f) &= -x'g - t'f - f'\mathrm{d}x, \\ K(g,f) &= \sum_{g,f} j^{-E(g,f)}. \end{aligned} \tag{2}$$

where g and f represent all possible states of all nodes in the deep learning neural network. If it is used for e-commerce platform logistics, it can grasp the various situations that appear on the platform and make improvements. If the state of the input layer has been determined, the condition of the state of the hidden layer of the deep neural network is

$$\begin{aligned} R\left(\frac{g}{f}\right) &= \frac{\exp\left(x'g + t'f + f'\mathrm{d}g\right)}{\sum_f \exp\left(x'g + t'f + f'\mathrm{d}g\right)}, \\ R\left(\frac{g}{f}\right) &= \frac{\exp\left(x'g + f'\mathrm{d}g\right)}{\sum_K \exp\left(x'g + f'\mathrm{d}g\right)}. \end{aligned} \tag{3}$$

Formula (3) can be simplified to

$$\begin{aligned} R\left(\frac{g}{f}\right) &= \frac{\prod_n \exp\left(x_n g_n + f_n d_n g\right)}{\prod_n \sum_K \exp\left(x_n g_n + f_n d_n g\right)}, \\ R\left(\frac{g}{f}\right) &= \frac{\coprod_n \exp\left[g\left(x' + f'd\right)\right]}{\prod_n \sum_K \exp\left[g\left(x' + f'd\right)\right]}, \\ R\left(\frac{g}{f}\right) &= \prod_n R\left(\frac{f_n}{g}\right), \end{aligned} \tag{4}$$

where n is the threshold of neurons in the neural network structure. It can be seen from the above formula that if the information of the input layer is known, then the probability of each node in the hidden layer in the deep learning network is a factorial. That is to say, in the e-commerce platform, each logistics is independent of the other but is interconnected. In the algorithm of deep learning, the neural network in deep learning adopts unsupervised learning. Applying it to the cross-border e-commerce platform can realize the intellectualization of the platform and improve the efficiency of the platform in dealing with problems. When the value weight in the neuron of deep learning is 1 and 2 and a node is in the activated state, the activation probability is

$$R\left(f_n = \frac{1}{g}\right) = \frac{\exp\left(x_n + d_n x\right)}{1 + \exp\left(x_n + d_n x\right)}. \tag{5}$$

Formula (5) can be expressed as follows:

$$R\left(f_n = \frac{1}{g}\right) = \operatorname{sigm}\left(x_n + d_n x\right). \tag{6}$$

In the same way, it can be concluded that the conditional probability of the input layer is

$$R\left(g_n = \frac{1}{f}\right) = \operatorname{sigm}\left(t_n + d_n t\right), \tag{7}$$

where $y = \operatorname{sigm}(x)$ is the activation function of neurons in the deep learning neural network. When the value weight of the input layer and the hidden layer are both the conditional probability of 1, the activation function can be indexed, and the normalization function can be obtained as follows:

$$R(g, f) = \frac{1}{K} j^{-Q(g,f)}, \tag{8}$$

where K is the normalization factor. Then it adds the input layer and the hidden layer to get

$$K = \sum_{g,f} j^{-Q(g,f)}. \tag{9}$$

The amount of business data allocated to the input layer by the network is the sum of the value weights of all the input layers, and it can get

$$R(f) = \frac{1}{K} \sum_{g} j^{-Q(g,f)}. \tag{10}$$

Since the neurons between the input layer and the hidden layer are independent and interrelated, there are:

$$\begin{aligned} R\left(\frac{f}{g}\right) &= \prod_{n}^{x} R\left(\frac{f_n}{g}\right), \\ R\left(\frac{g}{f}\right) &= \prod_{n}^{t} R\left(\frac{g_n}{f}\right). \end{aligned} \tag{11}$$

In this case, when the deep learning network is completed on the e-commerce platform, it can be used as a supporter for optimizing the logistics information network and communication network, helping to deal with the problems related to the supply chain. It can improve existing problems by applying deep neural networks to the logistics of transnational e-commerce platforms. It can also promote the speed of logistics and shorten the cycle of logistics and promote the healthy and green development of the supply chain of cross-border business platforms.

2.2. CBEC Platform Logistics and Supply Chain. CBEC refers to two traders who exist in different countries, through the e-commerce platform to reach a transaction between the two parties. When the transaction is completed, the product needs to be delivered to the consumer. Therefore, it needs to deliver goods to consumers through cross-border logistics to complete the entire cross-border transaction [9]. Of course, this is one of the supply chains, which is called the logistics supply chain. Cross-border transactions need to be concluded as long as there are commodities, and commodities are produced by enterprises, so cross-border transactions require the cooperation of multiple parties to complete. The cross-border transaction process is shown in Figure 3.

In Figure 3, the cross-border transaction requires consumers to place an order on the shopping platform, and the seller of the cross-border e-commerce platform will deliver the goods according to the received order and then send the goods to the buyer from the domestic logistics to the customs and the overseas logistics.

CBEC has competitive advantages such as fewer sales links and convenient payment. With the continuous improvement of the competitiveness of the international trade market, the rapid development of CBEC has brought huge profits at the same time. It also exposed the shortcomings of the CBEC platform development model. One is that most CBEC companies have not formed core competitiveness and brand effects. Each enterprise has its own governance, competing with each other in the form of price wars, and the products have become severely homogenized [10]. In terms of logistics, goods purchased across the border will undergo express delivery violence during transportation, resulting in quality problems and high costs in a long logistics cycle. In terms of logistics, the delivery service quality of CBEC is generally low. However, the speed of logistics distribution is relatively slow, and the cost of logistics distribution is also high. And it is prone to damage to goods during transportation. Some multinational e-commerce companies mainly engaged in small transactions are fragmented due to their relatively small trade scale. Therefore, the customs clearance time is too long, and the settlement method is not standardized. In addition, although the development of communication technology and science and technology has realized cross-border payments. However, although cross-border payment has realized the convenience of payment, it cannot guarantee the security of payment. There are still great security risks in the payment process [11]. Therefore, CBEC companies must take the initiative to seize the huge market opportunities provided by international big data resources, optimize the supply chain platform, and improve the quality

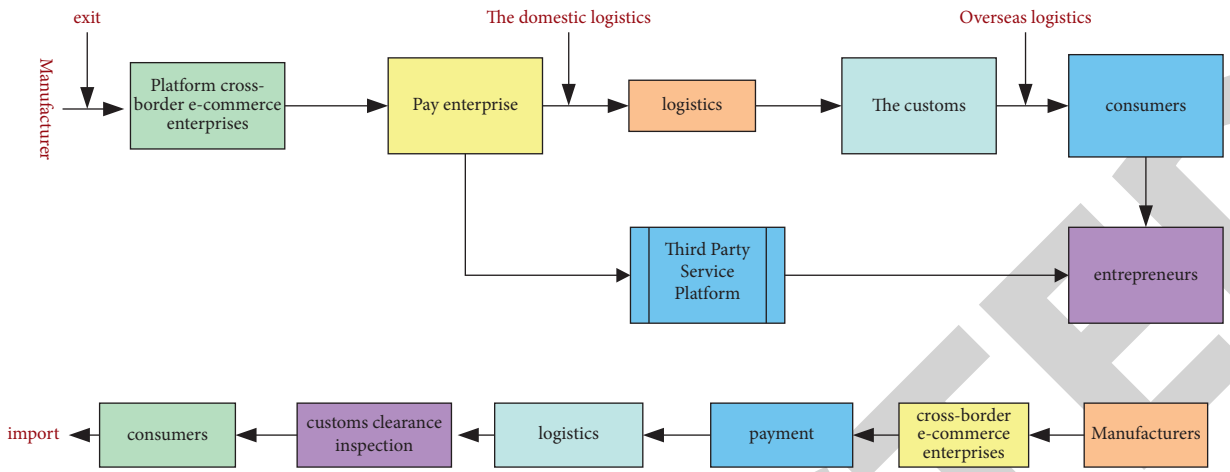

Figure 3: Cross-border transaction process.

of logistics services and the efficiency of logistics distribution. Although the development of CBEC is fast, there are still risks and shortcomings. Therefore, if it wants to better promote the development of CBEC, it needs to actively build a scientific and reasonable supply chain platform [12].

The current cross-border logistics speed cannot keep up with the development of cross-border commerce platforms, which will lead to a series of problems. For example, the logistics cycle is too long, which leads to the failure of logistics tracking, which leads to the repetition of work, and the delivery violence leads to quality problems. This makes a lot of unnecessary problems to occur. And, if the logistics, capital flow, and information flow cannot be carried out simultaneously, it will lead to the rework of many procedures, resulting in a large amount of time and capital costs. Therefore, it needs to optimize the cross-border platform logistics and supply chain network. It is necessary to promote the synchronization of the logistics, capital flow, and information flow of the CBEC platform to ensure the healthy and stable development of the e-commerce platform.

2.3. CBEC Platform Logistics and Supply Chain Network Optimization. At present, the development of cross-border logistics and CBEC is still not coordinated. The rapid development of CBEC makes it difficult for the development of cross-border logistics to keep up, but there are still many outstanding problems. Therefore, the network optimization of the supply chain of the CBEC platform is mainly aimed at optimizing the supply chain for the problem that logistics, capital flow, and information flow cannot be synchronized [13]. The goods of CBEC will pass through two or more countries during the transportation process, making it difficult to track the goods during the transportation process. So it is necessary to optimize the network for this problem. And, in the process of transportation, if the two countries are far apart, the goods will be delayed for a long time on the way of transportation, requiring a lot of time and cost [14]. Therefore, it uses deep learning neural networks to optimize the logistics and supply chains of multinational e-commerce platforms. The optimized network structure is shown in Figure 4:

As an e-commerce platform serves as a bridge between sellers and buyers, this platform needs to provide buyers and sellers with timely logistics information to prevent parcels from being lost. For this reason, in order to solve the loss of parcels between the two countries, the e-commerce platform can set up a warehouse overseas. In other words, it can first aggregate the goods delivered by domestic logistics to overseas warehouses. It then carries out foreign transportation to promote the efficiency of transportation. This can also reduce the cost of lost packages [15]. It is shown in Figure 5.

For the network optimization of the supply chain, its optimization adheres to low-carbon and environmental protection, optimizes the resource allocation of CBEC, and changes the situation of e-commerce enterprises being independent so that the resources of the e-commerce platform can be shared. The means to promote information communication provide a good information foundation for logistics tracking and e-commerce platforms. This is the complementarity between members in terms of production, capital, technology, and management relying on the e-commerce platform [16]. In addition, it is necessary to optimize the information infrastructure and remote communication technology, promote communication and contact between all parties, achieve the goal of timeliness, and improve the disadvantages caused by information delay. The management capability of the supply chain is measured from different aspects. These include online marketing capabilities, inventory management capabilities, and brand management capabilities, as shown in Figure 6.

Online marketing capabilities refer to sales capabilities on e-commerce platforms. The ability in this area is currently considerable because it saves consumers a lot of time and cost on the e-commerce platform, so online consumption is very happy [17]. Of course, for different commodities, the sales volume will of course be different. Therefore, the sales volume of this single product is difficult to consider and can only be seen from the sales capacity of the entire e-commerce platform. Inventory management capabilities will involve

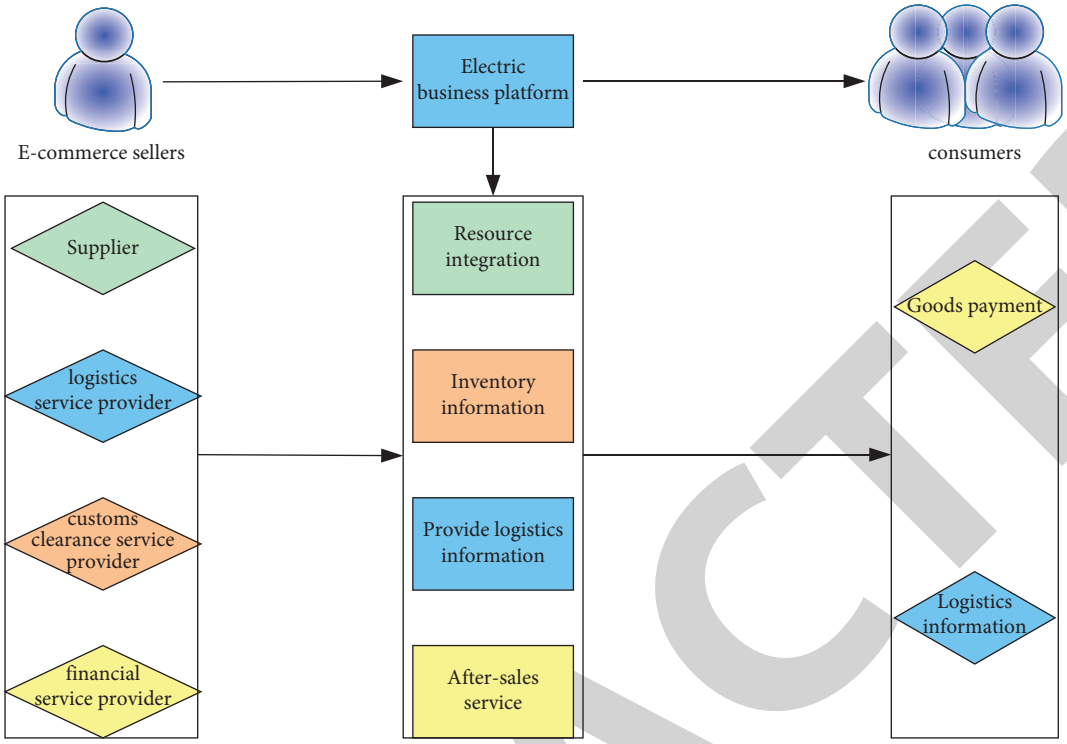

Figure 4: Network optimization structure.

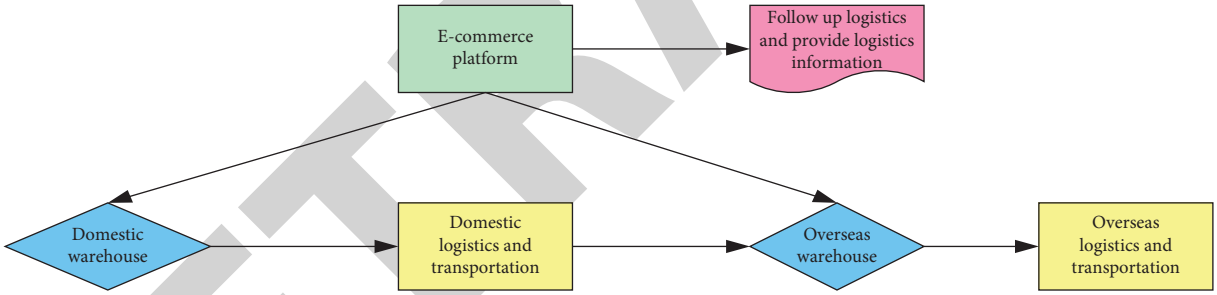

Figure 5: Supply chain logistics management of e-commerce platform.

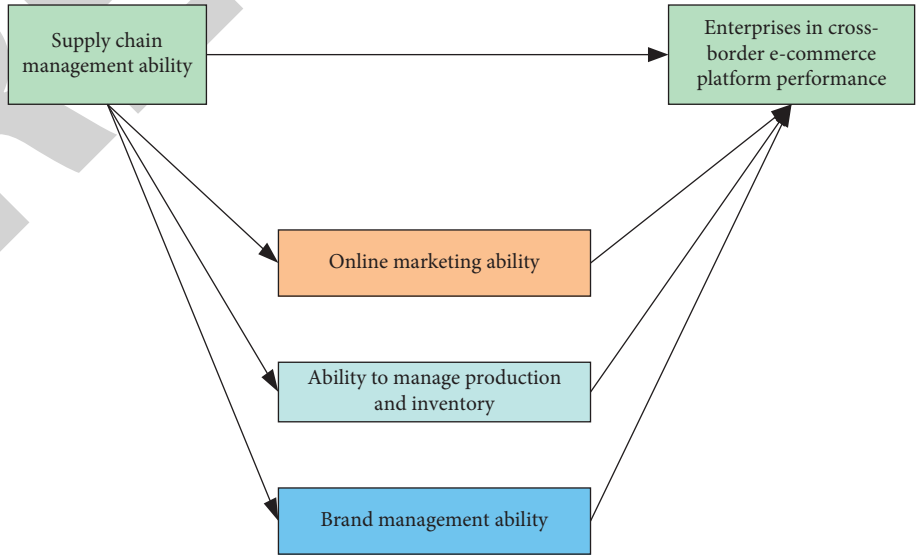

Figure 6: Measurement dimensions of supply chain capabilities.

logistics transportation. If inventory management can be carried out in an orderly manner, it is best if the inventory is sufficient, but there is not too much surplus. Logistics enterprises are part of the supply chain, so the inventory management of logistics enterprises also needs to be informatized, networked, and highly integrated. In this way, logistics management costs can be saved [18]. Brand management ability means that brand effects can be formed through the supply chain, but there are currently many CBEC companies. This makes different products compete to imitate in terms of performance, appearance, and even marketing methods, and it has also brought a huge impact to CBEC. Therefore, a resource aggregation platform is needed to integrate the resources of these homogeneous commodities. This article hopes to achieve brand effects and promote the healthy and stable development of e-commerce platforms [19].

3. Experiment and Analysis of CBEC Network Optimization Platform Logistics and Supply Chain

3.1. Is the Transportation Speed of the Logistics Supply Chain Improved? The network optimization of CBEC is to improve the efficiency of logistics and supply chain and to promote the green and healthy development of the supply chain. This experiment will measure and record the number of days required for express delivery from China to Switzerland and will use two logistics for transportation. One of them is the logistics after network optimization, and the other is the logistics before network optimization. Because the weight of goods will also affect the speed of logistics, the greater the weight, the longer the logistics transport time, so the weight of goods is also recorded. The goods to be shipped are shown in Table 1.

In Table 1, it can be seen that their logistics will deliver five items of different weights to the same place in the same country. To this end, it records the time required for the entire supply chain of different commodities from production to consumers in Table 2.

In Table 2, it has not yet recorded the returns and exchanges. If the product has quality problems during transportation, a lot of time cost may be incurred in the middle. Therefore, their current CBEC logistics will not only lose the goods but also may cause quality problems due to being too violent. For this reason, it recorded the logistics and supply chain efficiency of the CBEC platform after network optimization and compared it with the logistics and supply chain before optimization. The results are shown in Figure 7.

From Figure 7, the transportation speed of logistics transportation has been significantly improved after network optimization. In particular, the transportation speed of heavyweight commodities such as furniture and rubber has basically increased by about 50%, which shows that the transportation speed is very fast. However, the effect of increasing speed is not very obvious. The transportation speed dropped directly from 30 days to 5 days, and its efficiency was greatly improved. Therefore, in the transportation of small commodities, the efficiency improvement of the optimized logistics and the optimized logistics is uncertain, and it needs to be investigated according to the actual situation.

Table 1: Cross-border commodities.

Departure area	Destination	Goods	Weight of goods (kg)
China	Switzerland	A set of furniture	110
		Clothes	5
		Rubber sheet	50
		Makeup	20
		Shoes	15

Table 2: Time required for the entire supply chain.

Goods	Time (day)	
	Production	Transport
A set of furniture	30	20
Clothes	15	14
Rubber sheet	45	17.5
Makeup	20	30
Shoes	35	8

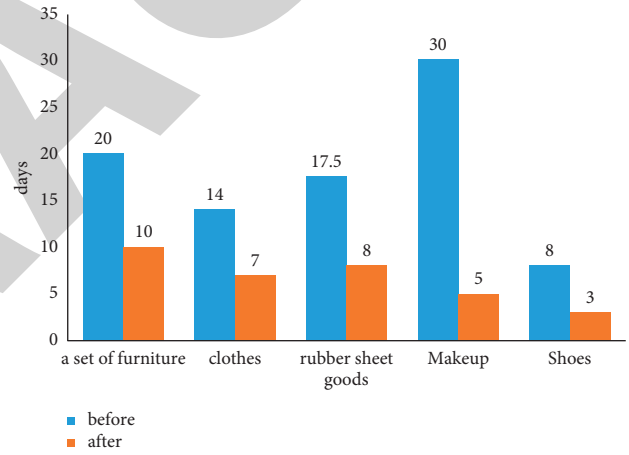

Figure 7: Time comparison chart before and after logistics and transportation optimization.

Cross-border logistics circulates between the two countries, so it also records the time from domestic to customs and the time of overseas transportation for comparison. At the same time, it also compared and analyzed the required transportation time before and after network optimization. During the period, it may fail to track the logistics when it uses the logistics before network optimization to go abroad. Therefore, overseas transportation will take more time. The recorded time is shown in Figure 8.

It can be clearly seen from Figure 8 that domestic logistics is faster than overseas logistics, whether it is before or after optimization, so domestic logistics tracking is very

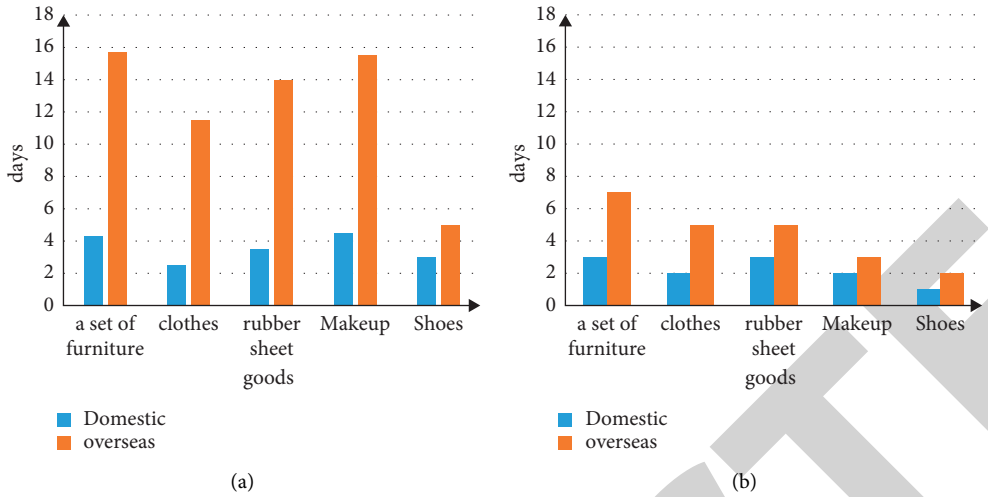

Figure 8: Comparison of domestic and overseas logistics speed: (a) before optimization and (b) after optimization.

time-efficient. However, in foreign countries, the logistics information will not be transmitted to the CBEC platform in time, which leads to more time spent on logistics abroad. The transportation efficiency of overseas logistics after network optimization is obviously much faster than that of overseas logistics before optimization. It saves a lot of time and cost, so in the logistics supply chain, the optimized CBEC platform logistics has a much higher commodity transportation efficiency.

3.2. Changes in the Management Capabilities of the Optimized Cross-Border Platform Supply Chain. This experiment is mainly to test the marketing capabilities of the optimized CBEC platform for various commodities. Its marketing ability is judged by the amount of sales. For the products that need to be calculated and the sales of these products in 2020, as shown in Table 3.

The product categories in this experiment are divided into five categories: electronic products, clothing, beauty, food, and daily necessities. It calculates and compares the sales before optimization, and the sales after optimization for these five categories to see if the marketing capabilities of the optimized CBEC platform supply chain management have improved. The result is shown in Figure 9.

Without network optimization, it can clearly see that sales are less than optimized sales. Because the optimized CBEC platform provides instant services, consumers have a better shopping experience. And, under the speed of logistics, the quality of the transportation process will also be guaranteed.

In terms of inventory management capabilities and brand management, supply chain management after network optimization can better promote the management of the two and realize the reasonable allocation of resources. Therefore, the abilities in these two aspects can naturally be improved accordingly, and in addition to better serving consumers, it also promotes the healthy development of bright orange in the supply chain.

Table 3: Product categories and sales in 2020.

Category of goods	Sales (million)
Electronic products	40,697,678
Clothing	77,865,445
Cosmetics	67,675,774
Food	73,465,683
Daily necessities	998,777,667

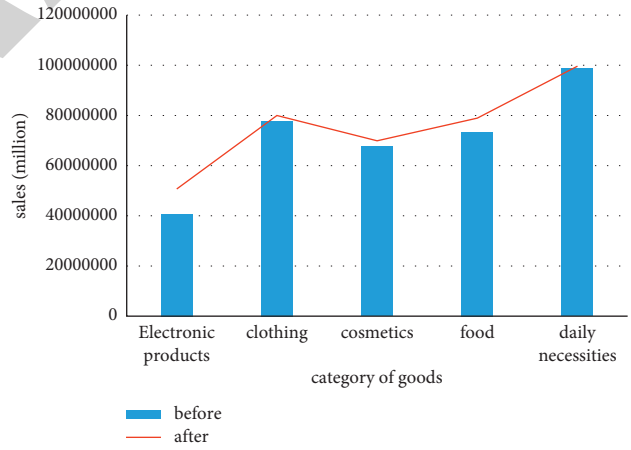

Figure 9: Comparison of sales before and after optimization.

3.3. Experiment Summary. The above experiments show that the network optimization of the logistics and supply chain of the CBEC platform has shown that the speed of its logistics has increased compared with the past, and its speed and efficiency have increased by about 50%. After the supply chain has been optimized, its inventory management capabilities have also increased significantly, which has promoted the rational allocation of resources. This effectively improves the speed of logistics transportation between regions. In a unified CBEC platform, it has improved the phenomenon of product homogeneity and promoted the

generation of brand effects. It has also promoted the online sales capabilities of CBEC platforms and increased annual sales in various categories. Gather individual foreign trade enterprises on the cross-border e-commerce platform to improve the brand effect of the industry and promote the green development of cross-border e-commerce.

4. Discussion

This article discusses the principles of deep learning neural networks. The deep learning neural network is composed of output, input, and hidden layers. The three tiers can operate simultaneously, and applying them to CBEC platforms can effectively serve buyers and sellers as well as e-commerce platforms. Output and input can be used to transmit various messages about logistics and supply chain. The hidden layer is the intermediate e-commerce platform, which makes the communication between buyers and sellers time-sensitive and reduces the loss caused by information delay [20]. Furthermore, deep learning neural networks can coordinate commodity resources for e-commerce platforms, carry out effective integration, and promote the rational use of resources. At the same time, in order to keep up with the development speed of CBEC platforms, deep learning neural networks can be trained on the platform first and then unsupervised learning according to the processing mode of the platform. It can be used as a manual operation on the platform to improve the efficiency of the e-commerce platform.

Secondly, the logistics and supply chain problems of multinational e-commerce platforms are now more prominent. Therefore, it is necessary to find solutions to these outstanding problems and to a certain extent improve the speed and level of logistics. At the same time, it is also necessary to ensure the quality of the goods required by buyers during the transportation process, improve the satisfaction of overseas customers, and reduce the probability of return and exchange. It needs to truly achieve the simultaneous development of supply chain, logistics, and CBEC and promote the green and healthy development of CBEC. In addition, it is also necessary to optimize the e-commerce platform, promote the service capability and service level of the e-commerce platform and the ability to solve problems, and improve the professional level of the e-commerce platform.

This article integrates deep learning neural networks into the CBEC platform logistics and supply chain. The purpose is to improve the current shortcomings of CBEC and promote the long-term development of CBEC. At the same time, it has also improved the management capabilities of the supply chain, changed the homogeneity of various commodities, and improved the service capabilities of the CBEC platform. This allows consumers to obtain a better consumer experience, can increase consumers' desire to consume, and promote sales. Secondly, it is possible to summarize the homogeneous products of different brands to promote the reasonable distribution of these products. This enables the simultaneous development of logistics speed and supply chain management with CBEC platforms.

5. Conclusions

This article has conducted an in-depth discussion on the theory of deep learning neural networks and also sorted out and explained the shortcomings of current CBEC platforms. This provides a better reference for the logistics and supply chain network optimization of the CBEC platform in the following article. In this paper, regarding the current e-commerce platform development and logistics problems and the lagging problems of information resources and capital chain, the deep learning neural network is integrated into the e-commerce platform to improve these problems. It has greatly improved the marketing capabilities, inventory management capabilities, and brand management capabilities of the cross-border business platform. It improves the efficiency of logistics and brings a better experience to consumers. This article has great theoretical significance and reference value for the research of CBEC platform logistics and supply chain network optimization. However, the research in this paper fails to fully consider the factors affecting the development of e-commerce platforms, and there are still many deficiencies. It is hoped that future research can consider other factors to promote the stable development of cross-border e-commerce platforms.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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