

Cost Control Analysis of Jingdong Logistics

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Abstract: The 21st century will be a new era of rapid development of China's e-commerce, and with the acceleration of economic development, China's logistics shortage will become increasingly prominent. Therefore, how to effectively control excessive logistics costs has become an urgent problem for e-commerce companies. This paper selects JD to study the logistics cost control. At present, JD's cost control is faced with such problems as high human resource cost, insufficient warehousing cost control, and incomplete procurement cost control. The main reasons for the study are that the salary burden of personnel is too heavy, the cost control system is not highly integrated, and the procurement management system is not sound. Finally, according to the existing problems, suggestions are given, that is, JD should establish a sound and reasonable personnel management system, improve the logistics cost control system, and establish a sound procurement management system.

Keywords: JD; Logistics; Cost Control

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1.Introduction

1.1 research background

Since the beginning of the 21st century, in the development of the Internet for more than ten years, the main network purchase and sale models have entered our sight, and domestic Internet enterprises have also begun to seek a share from e-commerce websites. China Internet e-commerce companies have expanded their business space from the initial development strategy of constantly improving commodity diversification, service quality, breadth and depth of content, including cross-border e-commerce, agricultural e-commerce website construction, promotion of green and ecological Internet transactions, etc.^[1] At present, vertical e-commerce companies such as mother and infant, household appliances and so on of some enterprises in China constantly strengthen their deep cultivation in their own fields, providing more brand-new competition modes for China e-commerce field and producing more and more impact on traditional marketing modes. With the in-depth development of new retail, e-commerce logistics ushered in a very rare development opportunity, and the development space of e-commerce logistics in China is very considerable. Therefore, how to effectively control logistics costs has become a common problem faced by e-commerce enterprises.^[2]

Jingdong is currently ranked among the top ten Internet e-commerce enterprises in China. It is also the landmark platform of B2C online trade mode among all current e-commerce platforms in China. Different from traditional third-party logistics enterprises such as Tmall and Taobao, Jingdong places its products in its own online shopping mall and adopts the operation method of self-built warehousing and logistics distribution system. It creates a value chain of Internet products and services

from upstream to downstream for consumers.^[3] For network companies that do not need a lot of physical costs, Jingdong should pay most attention to its control and operation of the company's logistics costs, so this paper will carry out in-depth research on Jingdong's logistics cost control.

1.2 research significance

Taking Jingdong as an example, this paper analyzes Jingdong's unique self-supporting logistics mode and existing logistics cost control methods, analyzes Jingdong's unique self-supporting logistics distribution management mode and current logistics cost control methods, combines the logistics cost control situation of domestic companies in the same industry, deeply analyzes the problems and reasons Jingdong faces when managing logistics cost, and gives specific suggestions, so as to optimize the overall logistics efficiency and cost. For the same industry to control logistics costs to provide a certain practical reference significance.

1.3 purpose of research

The concept of logistics management has been introduced into China for more than 20 years, but it is still in the primary stage of management due to insufficient attention and simple cost accounting. How to apply these concepts to individual enterprises in China's unique economic development stage has become an urgent issue to be solved. Therefore, this study will choose Jingdong as a case, and according to the problems existing in the logistics cost control process of Jingdong, the corresponding treatment methods are given, hoping to bring effective help to the logistics cost control of China e-commerce companies.

2.Logistics cost and logistics cost control

Logistics costs usually cover core links such as warehousing, handling and transportation, and are an integrated process throughout the entire business operation, involving goods distribution, human resources and related investment expenditures. Specifically, it includes the cost of self-owned vehicles, land, sea and air transportation expenses, and other transportation and maintenance expenses. In the total logistics cost, the storage cost accounts for a large proportion, so enterprises often control the overall cost by optimizing the storage layout and distribution system. For example, Jingdong enhances the competitiveness of user cooperation by continuously improving the logistics network and warehouse planning.

Logistics cost control aims to maximize profits by optimizing operational processes, reducing redundant links and reasonably controlling expenses. Its core principles include antinomy and comprehensive management. "Antinomy" reflects the trade-off relationship between various activities in the logistics system. For example, the pursuit of optimal transportation plan may lead to the increase of storage cost, while the reduction of storage scale may affect the distribution efficiency. Enterprises usually take three main control measures: one is to build an economical and efficient information system, strengthen data verification and department coordination, and reduce information processing costs; the other is to strictly manage inventory, which has a direct impact on the total logistics cost, so it is necessary to deeply master each link to effectively control cost and increase efficiency; the third is to scientifically plan distribution routes to improve transportation efficiency, especially in the context of increasingly fierce market competition, optimizing vehicle scheduling and route selection is particularly important.

At present, some logistics enterprises in our country have not established professional and standardized business processes and equipment systems, so it is very important to measure and evaluate logistics costs reasonably. Strengthening the control and management of logistics costs will not only help enterprises maintain and expand customer relationships, but also maintain a leading position in competition and comprehensively enhance their competitiveness.

3.Specific practice of Jingdong logistics cost control

3.1 Composition and Distribution of Jingdong Logistics Cost

According to the classification of enterprise management characteristics, the logistics distribution of enterprises includes the logistics of manufacturing enterprises and the logistics of circulation enterprises, so the corresponding composition of logistics distribution costs can also be classified according to this.^[4] The logistics cost structure can be divided into manufacturing enterprises and commodity circulation enterprises. Jingdong is a self-supporting e-commerce company, so Jingdong's logistics cost structure should be consistent with that of commodity circulation enterprises. Its basic structure includes:

- (1) Logistics information costs, including logistics hardware, software procurement costs, and future maintenance costs.
- (2) Administrative expenses, including labor remuneration of employees of administrative organs, government service fees, fixed assets fees of enterprises, living service fees, travel expenses, taxes, etc.
- (3) Labor expenditure, including salary, treatment, reward, daily living allowance, social protection, housing accumulation fund, etc. for staff members.
- (4) Economic expenses, including loan interest expenses, exchange rate difference expenses, fund occupation fees, relevant handling expenses, etc

3.2 Jingdong logistics cost control methods used

3.2.1 POP Supplier Management

At present, Jingdong mainly has four pop modes:

- (1) After the consumer places an order, the third-party seller will deliver it by himself and issue an invoice to the consumer (SOP).
- (2) After the consumer places an order, the third-party seller is responsible for distributing the product logistics to Jingdong Sorting Service Center and providing invoices, and Jingdong Logistics is responsible for sending the products of the sorting service center to the consumer (Sopl).
- (3) After the consumer places an order, the third-party seller is responsible for delivering the product selected by the consumer to Jingdong Logistics Distribution Center, and Jingdong Company is responsible for providing invoices and completing logistics distribution. (LBP)
- (4) Jingdong assumes full responsibility for procurement, sales and distribution (FBP). Table 3-2 shows JD.com supplier management mode.

Jingdong Supplier Management Mode

online	storage	pattern	delivery speed	last mile
Open (self-operated + third-party)	Jingdong	self-operated、FBP	Same day, next day	
	seller	LBP/SOPL	within three days	Self-pick-up point, express cabinet
	seller	SOP	within three days	

Merchants cooperating with Jingdong can directly transport goods to Jingdong warehouse in various cities across the country, and Jingdong Company will carry out later inventory, logistics distribution, service and other links. With Jingdong's professional network platform, consumers can experience higher-quality after-sales service, stores do not have to spend huge costs to build their own logistics distribution system and service, with relatively small costs can also let consumers get more professional after-sales service.

3.2.2 Intelligent storage system

At present, Jingdong has established "Asia No.1" intelligent management platform in eight major markets such as Wuhan, Guangzhou and Shanghai, and has carried out intelligent management through comprehensive adoption of intelligent equipment and robot technology, and applied it to all aspects of business, thus greatly reducing logistics costs and improving the company's operation efficiency. At the same time, Jingdong Logistics has also made management norms for its problems in operation through intelligent management technology, so as to enhance its management ability to cope with difficulties. Among them, the "goods to people" management system can automatically store and move pallets, and can also complete the packaging of goods to people; efficient intelligent packaging management system, combined with fully automatic equipment, can minimize staff input, improve packaging quality, and reduce labor input.

3.2.3 smart supply chain

Jingdong analyzes user consumption behavior by using the whole big data analysis and the execution ability of AI execution and prediction. This strategy proposes a series of solutions from the four fields of artificial intelligence, data mining,

technological innovation and business process reshaping. In addition, the adoption of intelligent supply chain solutions is also more conducive to the development of Jingdong. The comprehensive use of intelligent supply chain system in Jingdong can improve the overall operation efficiency of Jingdong without spending huge manpower on some complicated work. In this way, Jingdong can better guarantee the explosion of goods on the network platform and reasonable stock.

3.3 Analysis on Cost Composition of Jingdong Logistics

Jingdong is the same as many other international self-built logistics distribution companies. Its cost accounting is roughly divided into raw material supply logistics cost, commodity distribution logistics cost, commodity inventory logistics cost and labor.

3.3.1 Current Situation of Labor Cost Control in Jingdong Logistics

Number of Jingdong Logistics Personnel

category	number of people	remark
support staff	about 5200	
Custodian, courier	about 60000	4 million square meters, 50 cities, 7 logistics centers
warehouse	256	
Self-pick-up and distribution station	6906	

Data source: Jingdong Annual Report 2021.

According to the information once published by Jingdong Company, due to the rapid expansion of Jingdong's business in recent years, the number of staff employed has also risen sharply. According to the monthly salary of 3500 yuan in 2021, about 60,000 personnel in Jingdong's distribution department means that the annual human resources cost will be at least 2.1 billion yuan. For a huge company with high labor cost in logistics such as Jingdong, how to realize scientific and reasonable distribution and the most effective use of human resources is the main task in the cost control of modern companies, and it is also a key area of cost control for modern company operation and enterprise development. Therefore, Jingdong still has problems in human resource cost control and effective use and control of logistics distribution talents.

3.3.2 Jingdong Logistics Cost Control Status

Cost Rate of Jingdong Logistics

	2021	2020	2019	2018	2017
Order processing costs	8.05%	7.68%	7.01%	5.93%	7.40%
marketing expenses	4.06%	4.27%	3.49%	2.29%	2.65%
Technology R & D expenses	2.07%	1.91%	1.60%	1.39%	1.54%
administration expense (cost)	1.79%	1.59%	4.57%	1.10%	1.50%
total	15.97%	15.4%	16.67%	10.71%	13.13%

Data source: Jingdong Annual Report 2017-2021.

Jingdong's order processing expense rate has remained below 7% since 2017, of which the order processing expense rate has dropped significantly in 2018. The main reason why this ratio will continue to increase in 2020 is the slowing pace of warehouse construction and the complex labor costs., machinery and equipment and other related cost factors, the proportion will continue to increase. The promotion expense rate of enterprises from 2019 to 2020 has also increased significantly, which is mainly due to Jingdong's increased investment in advertising. Through the relevant financial data released by Jingdong in the five-year report from 2017 to 2021, it can be found that Jingdong is not only strengthening the investment and purchase of fixed assets, but also continuously strengthening the construction of modern logistics system.

3.3.3 Current Situation of Jingdong Logistics Storage Cost Control

2017-2021 Jingdong Profit Statement (Part)

	2021	2020	2019	2018	2017
taking	260122	181287	115002	69340	41381
Administrative expenses Other	4663	2877	5260	760	639
Technology R & D expenses	58	3454	1836	964	636
Marketing expenses	10573	7736	4010	1590	1097
Order processing costs	20951	13921	8067	4109	3061
Less: Operating expenses	41568	27988	19173	7423	5433
gross margin	39423	24267	13371	6844	3482
Online revenue	237702	167721	108549	67018	40335
operating profit	6471	-64.59	-5802	-579	-1951

Data source: Jingdong Annual Report 2017-2021.

The storage cost in Jingdong's self-built logistics distribution system mainly involves the salary of warehouse personnel, investment in storage site and maintenance cost, as well as the maintenance cost required by the company in the whole logistics storage process. At present, although Jingdong's total gross profit of enterprise commodities continues to grow in recent years, its operating income is constantly losing money, and Jingdong's total enterprise management expenses are also continuously rising, which is mainly related to Jingdong's own large investment in self-built logistics. According to the enterprise annual report published by Jingdong, due to its large investment in logistics distribution over the years, the data profits in the report are negative, and under such a large amount of logistics investment, many problems such as low benefit and unreasonable resource allocation have arisen at the same time.

3.3.4 Current status of Jingdong logistics procurement cost control

Purchase Cost Table of Jingdong and Amazon from 2017 to 2021

		2021	2020	2019	2018	2017
Procurement costs as a percentage of revenue	Jingdong	84.84%	86.61%	88.37%	90.13%	91.59%
	Amazon	57.91%	68.29%	70.66%	73.51%	76.09%
gross profit rate	Jingdong	15.20%	13.39%	12.32%	10.21%	8.63%
	Amazon	34.98%	32.97%	30.02%	27.10%	9.23%

Source: Jingdong and Amazon Annual Report 2017-2021.

By selecting Amazon in the same industry for comparison and comparing the proportion of procurement cost to operating income, it can be found that Amazon's proportion is also gradually decreasing from 2017 to 2021, which indicates that under the condition of ensuring operating income, the enterprise is also carrying out a large number of measures to control production cost and improve logistics distribution quality. Moreover, Amazon's market share is still much smaller than Jingdong's, and the gap will remain at 18% in the five years from 2017 to 2021, indicating that Jingdong must make further efforts in its own logistics distribution system and cost control system construction to improve production efficiency and cost control. At the same time, we should improve our own customer data analysis cloud system, improve the data analysis effect, build our own storage system in the area with higher customer concentration, and reduce the production cost to the lowest level.

4. Jingdong logistics cost control problems and reasons

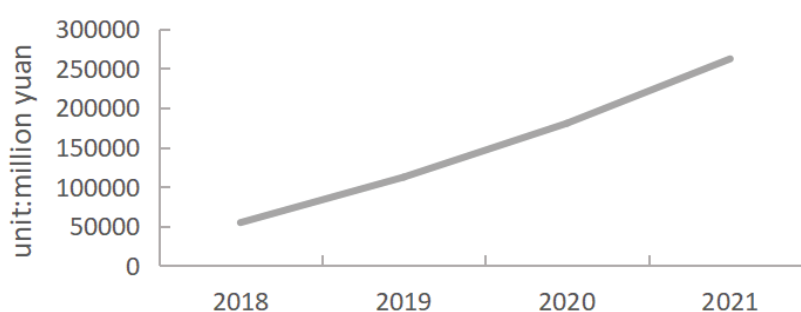
4.1 The main problems existing in Jingdong logistics cost control

4.1.1 High labor costs

It can be seen from the above that the labor cost of Jingdong Logistics is too high. For the company, the salary of logistics distribution personnel is originally a general human resource cost of the company. However, for Jingdong, the salary of logistics distribution personnel becomes an extra expense in the process of building its own logistics distribution system. The company must compensate for these human resource costs by increasing investment in its main business.^[5] Therefore, the human resource cost of Jingdong Mall is also relatively high. Jingdong's senior management turnover frequency is also relatively high. As the company is in the key period of expansion and transformation, although all departments and local governments of the company are constantly strengthening human resources management, it is still difficult to set up and manage talents of the company due to the great difficulty of talent management across regions, as well as the uneven quality of company culture and management personnel.

4.1.2 Insufficient storage cost control

Jingdong Logistics Cost Trend Chart



Jingdong has invested heavily every year since it started to build its own logistics center. The advantages of self-built logistics distribution mode are also gradually formed with the development of the system, which is mainly manifested in that the company can more conveniently supervise and control the logistics distribution process, the service level will be improved qualitatively than in the past, and the turnover times of loans will gradually decrease. Although the advantages of cost control of self-built logistics have become increasingly prominent in the business process during the company's development, with the further expansion of the company's scale, stronger capital chain guarantee is still needed, and the increase in the amount of investment in logistics distribution will also cause pressure on the company's capital flow.

4.1.3 Procurement cost control is not comprehensive

Jingdong has not set up departments related to procurement cost and accounting management, which is also the reason why the cost accounting management effect of the company in the process of commodity production is ordinary. The internal financial department of the company does not have the power to directly control the cost accounting management at the company level. The audit department of the company is only the middle department of the enterprise or the minister of the enterprise with a smaller level, while the chief financial officer and the accounting director are only the department managers of the company, not the management power of the deputy general manager level of the enterprise. The financial department is in charge of specific cost, planning and management, etc. The accounting organization does not make relatively complete design, calculation, supervision and correction of cost control from the overall perspective, or only relies on the current cost control regulations to complete general tasks. The imperfect management and unclear responsibility are also easy to cause the cost control results of the company's production process to be unsatisfactory.

4.2 Causes of Problems in Cost Control of Jingdong Logistics

4.2.1 Pay overload

As a large-scale e-commerce company, Jingdong has also reached the leading level in the industry. In terms of total personnel management and recruitment, Jingdong also exceeds other enterprises in the same industry due to its self-built logistics distribution system and demand for the number of distribution personnel. Therefore, this also shows that the main factor of

Jingdong's overall personnel cost is due to the large number of grass-roots personnel, plus the higher salary of the company's senior management. This is closely related to Jingdong's company strategy, because Jingdong enterprises always have to create their own characteristic high-end network platform in the field of self-built logistics applications, so the company will invest more in the management and treatment of personnel.

4.2.2 Imperfect cost control system

The logistics management control of Jingdong has not been managed by special personnel. The financial department only has the power to formulate the cost control system in the logistics cost control work, and has no power to control the logistics cost. The management is incomplete, and there is no overall planning and guidance. Jingdong did not establish a special logistics cost plan internally, but the financial department formulated the overall cost plan of the enterprise according to the business strategy, and then allocated the overall cost to the department first, and then allocated the overall cost of the department to the department group. However, this cost control was not fully implemented in the specific process of the whole work, but only formulated on a large scale. Enterprises do not effectively integrate logistics cost control and sales plan, and fail to make effective adjustment to logistics cost of internal management.

4.2.3 Lack of professionalism in procurement management

At present, Jingdong has insufficient professionalism in procurement management, but Jingdong has not issued specific management regulations and requirements for matters related to procurement management. The traditional management regulations are completely "castles in the air", and the compliance of staff responsible for procurement work on specific projects is not large.^[6] Because Jingdong adopts its own e-commerce operation mode, the relationship between Jingdong and suppliers is very close. With the continuous expansion of business scale, the procurement staff in charge of various fields will gradually form closer cooperation relationship with suppliers. In this process, there will also be some procurement staff who actually control power to abuse public power for personal gain, resulting in a profit supply chain. Throughout the workflow, these purchasers judge the enterprise at will, and their overall conceptual understanding of the real enterprise situation and capital situation is not obvious.

5. Suggestions for improving the cost control effect of Jingdong Logistics

5.1 Establishing Scientific and Rational Talent Management System

As for the control of human resources cost, it not only directly reduces the average value of human resources cost, but also improves the quality and cost performance of human resources cost. For college students who have just entered the company, they should rotate their posts from different positions, which can have a rough understanding of the overall operation of the enterprise and their respective job responsibilities. Therefore, from this concept point of view, for Jingdong, a large company with clear functional differentiation, it is necessary to improve and develop the ability of employees, especially the distribution personnel working in the front line, must grasp the strict degree of supervision, find appropriate methods to communicate with employees, and pay attention to appropriate rewards and punishments. For the enterprise operation level, Jingdong needs to constantly improve the standardized recruitment process. In addition, although the current UAV logistics technology is still difficult to achieve, but also can focus on the use of robots, intelligent equipment sorting goods and warehouse management, so as to introduce and improve production efficiency, reduce labor distribution rate, this is also effective control of labor costs Another way.

5.2 Strengthen the Control and Management of Logistics Cost

Jingdong's business scale continues to expand, and it is increasingly necessary to establish a certain supervision mechanism within the company. At present, since Jingdong's company structure mainly has functional departments, and most of its employees are distributed in business processing, more internal supervision organizations or administrative organizations are needed to restrict these parts, which is also very necessary for the company's internal logistics cost control. Therefore, Jingdong should refer to the management experience of other companies in the same industry and summarize and study in constructing its own cost plan system, and put forward appropriate cost plan or income expectation plan according to the reality that Jingdong is too focused on logistics service at present. In addition to independent management of one link and monitoring of one part, Jingdong should also set up supervision agencies to supervise the monitoring and assessment results

of each part, set up special personnel for management at each control point, and realize cross-monitoring and assessment of point-to-point and department-to-unit, such as in the purchase process of commodities, as well as in the picking and logistics process.

5.3 Building a sound procurement system

The procurement system needs to make specific behavior norms for the relationship between procurement personnel and procurement directors and procurement supervisors, and at the same time, specific and effective guidelines for the procedures and methods of enterprise procurement are also needed. As the most critical part of Jingdong, the enterprise procurement division also needs to pay attention to coordination with other departments of the enterprise, hold regular information sharing meetings with the enterprise marketing department, and propose targeted procurement methods for the customer intention information and relevant marketing planning proposed by the enterprise marketing department, which can reduce the procurement cost for the enterprise, thus improving the overall supplier work efficiency of the enterprise. At the same time, do not ignore the qualification review of suppliers, review the access qualifications of suppliers, establish a supplier filing registration standard suitable for Jingdong, and also evaluate the credit rating of suppliers to ensure the fairness and justice of the enterprise procurement process. At present, Jingdong's random inspection and review of purchased commodities is very small, so it is necessary to improve the degree of random inspection and review of purchased commodities, and it is also necessary to build a special price verification team.

6. Conclusions

Jingdong's development speed is relatively fast, and the company scale is also very large at present. Most of the research on Jingdong's self-built logistics cost in China focuses on theory, while the research results combining the actual situation of the company are relatively rare. According to the actual situation of Jingdong Company and its real operating situation in the market at present, this paper finds out the problems existing in its development process, and gives some measures to solve the problems after analyzing the reasons. It is expected that this paper can provide some enlightenment for B2C E-commerce Company in cost control, so as to promote the integration of logistics cost control theory and practice, further improve the corresponding management system, At the same time, targeted policies and measures are formulated for each link of the actual operation of the company, so as to achieve the purpose of effectively controlling logistics costs, thus enhancing the strength of the company.

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No

Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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