

Research on the Optimization of JD's Self-built Logistics

Peng Luo^{a,*}, Meili Zhang^b

School of Economics and management, Southwest Petroleum University, Chengdu 610500, China

^{a,*}2277907783@qq.com, ^b3047156142@qq.com

Abstract

JD's Self-built logistics model has made great achievements but also faces new challenges. This paper constructs a SWOT matrix to analyze the advantages, disadvantages, opportunities, and threats of JD's Self-built logistics. Identify the primary problems of Self-built logistics by constructing an IFE internal factor analysis matrix and an external factor EFE matrix. Finally, feasible suggestions are given from four aspects: improvement of satisfaction, personnel training, logistics facility construction, and information center construction.

Keywords

Self-built Logistics; IFE Matrix; EFE Matrix; Logistics Optimization.

1. Introduction

In China, the construction of the logistics system mainly includes the construction of the third-party logistics system and the Self-built logistics system. The logistics system construction of the three e-commerce giants, Taobao, Tmall, and JD.com, has its own characteristics. Many scholars have studied the choice of logistics mode. Ying (2022) Summarize several logistics modes of cross-border e-commerce exports, including international postal parcels, international express, international special lines, etc., and choose different international logistics modes according to different import and export goods [1]. Fan (2020) Analyze the development advantages of crowdsourced logistics models; build a crowdsourced logistics platform; focus on last-mile delivery models; and analyze management strategies using explanatory structural models [2]. Wu (2022) established a mixed integer stochastic programming model to make decisions on location selection and allocation variables and analyzed the optimal path for packaging recycling in reverse logistics of self-operated logistics [3]. Blanchard (2018) believes that the key to the success of self-operated logistics lies in cost control. In the new economic environment, continuous improvement of logistics cost management methods can enhance self-competitiveness [4]. Tang (2022) conducted the demand analysis and system framework design of the intelligent logistics information system based on the Internet of Things and realized the functions of intelligent analysis, perception, optimal decision-making, and efficient execution of the logistics park [5]. Compared with third-party logistics, Self-built logistics has the characteristics of agile transportation and customization of user needs. In China, Self-built logistics is represented by JD. In 2007, JD There are also new challenges. such as the capital investment in distribution personnel, logistics center construction, etc., and new problems such as the establishment of a logistics control information center and the difficulty of information coordination.

This paper takes the opportunity of the current situation of JD's Self-built logistics, analyzes the problems existing in JD's Self-built logistics through SWOT analysis method, IFE matrix and EFE matrix, and finally gives corresponding countermeasures according to the problems.

2. Methodologies

In this section, we mainly analyze the advantages, disadvantages, opportunities, and threats of JD's Self-built logistics through the SWOT matrix.

2.1. Strength

Compared with third-party logistics, the advantages of JD's Self-built logistics lie in the timeliness of distribution and capital liquidity. First, through Self-built warehouses, the intermediate links of goods from manufacturers to final consumers are reduced, and the realization of at least two the distribution process of transportation, that is, the factory to the warehouse, and the warehouse to the consumer, Secondly, JD.com brings more timely services to customers through self-operated delivery, especially during major festivals such as the Spring Festival. Generally, express delivery companies are on holiday during the "peak online shopping" period. While consumers get a good consumption experience, JD.com will not lose orders for traditional holidays. Finally, the cash-on-delivery service in JD's logistics service is very popular. Based on JD's Self-built logistics system, the capital recovery of goods does not require the agent of a third-party express company, which simplifies the flow of funds and speeds up the flow of funds.

2.2. Weakness

Self-built logistics requires huge capital investment, and the return period of capital is long. "70% of financing will be used for logistics system construction," and "logistics and R & D account for 70% of the total cost." JD's investment in logistics requires a lot of money, and the return of the logistics system can only be realized when the construction of the entire logistics system is completed, the scale effect is prominent, and the average cost is reduced. JD's Self-built logistics has the characteristics of high investment and a long return period, which makes it subject to severe tests. Due to the pressure of distribution and the difficulty of management, JD.com has won the reputation of consumers for its "low-cost genuine products" and "same-day or next-day delivery." But the rapid growth of orders has caused the logistics link to fail to keep up, and the self-operated logistics system is still being built. The construction of logistics distribution systems in some cities is not complete. When large-scale promotional activities occur, it will be difficult for JD.com's logistics to meet the needs of a large number of orders, and the logistics pressure will increase sharply. JD.com has 20,000 delivery personnel now. The management of the huge logistics team requires the company's leadership to invest a lot of manpower and material resources, which increases the difficulty of management and coordination of the enterprise.

2.3. Opportunity

The Self-built logistics have a scale effect. The initial investment cost is high, but the later cost is reduced. With the increase of Self-built warehouses, the goods are getting closer and closer to consumers, and the moving distance is getting shorter and shorter, so the speed is getting faster and the cost is lower. It is getting lower and lower, so it is a positive cycle. The larger the scale, the lower the distribution of logistics costs, the more obvious the scale effect of logistics and the more prominent the value of logistics to society. Develop an offline publicity and marketing business. JD.com has built a logistics system across the country. All distribution personnel have unified clothing and service methods. This not only improves consumers' shopping speed and convenience logistics experience but also produces a good brand publicity effect. At the same time, couriers are the workers closest to consumers in the e-commerce system. When they have face-to-face contact with consumers, they can promote the corresponding products or publicize the activities of Jingdong by understanding the demand preferences of regional customers.

2.4. Threat

The investment in core competitiveness is too small, and the market's competitiveness is weakened. JD.com has invested a lot of resources in the company's Self-built logistics system, occupying a lot of manpower and material resources, and the investment in the core e-commerce part has declined, leading to the core competition of JD.com's e-commerce. decrease in ability. The third-party logistics system is becoming more and more perfect, with cost advantages and scale economies, which will affect the operation of the Self-built logistics market. Finally, the impact of the express alliance makes it more difficult for Self-built logistics to compete in the market.

Table 1. Jingdong Self-built logistics swot matrix

strength	weakness	Opportunity	Threat
High delivery timeliness Faster return of funds	Large amount of investment The delivery system is not perfect Difficulty in coordinating delivery personnel	Self-built logistics expected economies of scale Logistics and distribution bring publicity effect	Weakening of market competitiveness The cost advantage of third-party logistics The impact of the formation of the express alliance

3. Results and Discussions

In this section, we identify the internal and external environmental factors of JD's Self-built logistics and analyze the problems existing in JD's Self-built logistics through the internal factor IFE matrix and the external factor EFE matrix.

The SWOT matrix of JD's Self-built logistics is listed in Table 1. At the same time, the internal factor evaluation matrix (IFE) and the external factor evaluation matrix (EFE) are designed, and the Delphi method is used to carry out expert scoring evaluation, identify the weight of each factor, and accurately and objectively evaluate JD.com. The internal and external factors of Self-built logistics are shown in Table 2.

Table 2. Evaluation of internal and external factors of JD's Self-built logistics

Internal factor IFE matrix				External Factor EFE Matrix			
key interior factor	Weights	score	total score	key interior factor	Weights	score	total score
strength: Logistics timeliness	0.21	4	0.84	Opportunity: Logisticseconomy of scale	0.24	2	0.48
Faster return of funds	0.16	3	0.48	Logistics publicity effect	0.31	3	0.93
weakness: Capital investment	0.26	2	0.52	Threat: Market Competitiveness	0.16	3	0.48
Distribution system	0.17	2	0.34	Cost competition	0.14	3	0.42
Personnel coordination	0.20	1	0.20	Express strategic alliance	0.15	4	0.60
total	1.0		2.38		1.0		2.91

From the matrix evaluation table, we found that JD's Self-built logistics is mainly lacking in three aspects: consumer satisfaction with delivery; the cultural quality and service quality of the delivery team; and the transformation of delivery software facilities. 1) Consumer satisfaction with logistics is affected by delivery speed. JD.com has built a reputation for providing consumers with "low-cost genuine products" and "same-day or next-day delivery" since its inception. However, in the development process of the mall, logistics and distribution cannot meet the demand for orders, which results in a large number of orders being delayed, consumer satisfaction declining, and logistics costs increasing. At the same time, there are many factors that make consumers dissatisfied with the delivery process of JD Logistics, such as untimely delivery, imperfect compensation for cargo damage, and the lack of a good customer service communication mechanism, which reduces the company's credibility. 2) The caliber of logistics personnel reflects JD.com's corporate image. The distribution team of the Self-built logistics system has a low entry threshold and low specialization, and it is difficult to adapt to the changes in consumer demand for customization. The new consumption environment has higher requirements for logistics and distribution personnel. As a result, Self-built logistics must improve the quality and professional skills of logistics and distribution personnel training. 3) E-commerce logistics distribution necessitates the use of warehouses, vehicles, personnel, and IT equipment. Generally, consumers can access personnel, vehicles, and IT facilities. Perfection will also be gradually improved. Consumers want to check the delivery status and location of ordered goods in real time. However, at present, except for a few B2C e-commerce companies that have realized GPS positioning of delivery staff, other value-added services have not been realized, and real-time information updates during the delivery process cannot be realized, consumers lag in obtaining information, and user satisfaction is reduced.

4. Conclusion

In this section, the strategies of JD.com's Self-built logistics are given, mainly including the choice of distribution mode, improving user satisfaction, strengthening personnel training, and building logistics and distribution hardware and software systems.

4.1. Increase Delivery Speed and Customer Satisfaction

The delivery speed of logistics is an important factor affecting customer satisfaction. JD.com has launched the "211 Limited Time Delivery" delivery service. Spot orders are submitted before 11:00 am on the same day, and the calculation starts from the time when the order enters the out-of-stock state, and it will be delivered on the same day. Spot orders submitted before 00:00 will be counted from the time the order enters the out-of-stock state and will be delivered the next morning. At present, there is no second e-commerce company that can promise JD.com focuses on last-mile delivery to improve its own distribution and after-sales service, as well as to increase customer satisfaction.

4.2. Enhanced Training and Assessment of Delivery Personnel

Through the training and education of existing personnel, it can be carried out at different levels, and different training objectives, training contents, and training programs can be formulated according to the nature of work and the level of logistics personnel. standardize their service behavior, improve their service level, improve customer satisfaction, and conduct multi-angle performance appraisals for logistics service personnel to motivate them to provide better services. Introduce excellent talents, cooperate with colleges and universities, and entrust colleges and universities to cultivate the talents they need. Jingdong can send its employees to colleges and universities to let them learn advanced logistics management methods and technical means, become senior managers of enterprises, and improve the management level of enterprises themselves.

4.3. The Infrastructure of the Logistics Distribution System

The logistics distribution infrastructure mainly includes transportation facilities, information communication facilities, and logistics centers. In terms of transportation, JD's Self-built logistics should make full use of modern and perfect transportation infrastructure to rationally arrange transportation routes. In terms of information and communication facilities, JD's Self-built logistics should use Internet information technology to improve the level of information technology in logistics activities and management. In the construction of the logistics center, JD's Self-built logistics can strengthen the location selection and construction of the logistics center nationwide in combination with the strategic development needs of the enterprise and the scope of market radiation. by strengthening the infrastructure of the logistics distribution system, shortening the logistics distribution cycle, achieving economies of scale, and reducing logistics distribution costs.

4.4. Implement Cutting-Edge Logistics Information Systems and Equipment

Pay attention to the construction of logistics information systems. Jingdong adopts an advanced logistics information system to construct a modern information management platform. By providing end-to-end service quality assurance, real-time tracking of information, and the convenience for customers to quickly and quickly find the delivery information of their purchased products, and solving the problem of information asymmetry, Realize the collection of business flow, logistics, capital flow, and information flow.

References

- [1] Yang Ying, Chen Miaochao. Selection Method of Cross-Border e-Commerce Export Logistics Mode Based on Collaborative Filtering Algorithm[J]. Journal of Mathematics, 2022, 2022.
- [2] Lixue Fan, Huaqiong Liu*. Study of Crowdsourcing Logistics Mode for Rural Logistics "Last Mile" Delivery [J]. Journal of Simulation, 2020, 8(3).
- [3] Shuqiao Wu. Reverse Network Design for E-commerce Enterprises with Self-operated Logistics under Uncertainties[J]. International Core Journal of Engineering, 2022, 8(2).
- [4] Dave Blanchard. The Era of Do-It-Yourself Logistics[J]. Material Handling & Logistics, 2018.
- [5] Tang Xiuli. Research on Smart Logistics Model Based on Internet of Things Technology[J]. IEEE ACCESS, 2020, 8.