Research on Optimization and Management Strategy of Tobacco Terminal Supply Chain from the Perspective of Smart Logistics

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Abstract. This study takes smart logistics as the core perspective, and deeply discusses the optimization and management strategy of tobacco terminal supply chain to meet the challenges faced by today's tobacco industry. By analyzing the current situation and problems of tobacco terminal supply chain, this paper puts forward targeted optimization strategies, and strives to provide new ideas and methods for the sustainable development of tobacco industry.

Keywords: smart logistics, tobacco terminal supply chain, optimization strategy

1 Introduction

With the rapid development of China's economy and the continuous progress of science and technology, smart logistics has become an important trend in the field of modern logistics, providing new opportunities and challenges for all walks of life. In this wave, the tobacco industry, as one of the important industries in China, is inevitably affected. The optimization and management of tobacco terminal supply chain is of great significance for improving industry efficiency, reducing costs and enhancing competitiveness. Therefore, the goal of this study is to deeply study the tobacco terminal supply chain from the perspective of smart logistics, and to explore how to upgrade and innovate the supply chain with the help of modern technology and management strategies to promote the sustainable development of the tobacco industry.

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2 Overview of Smart Logistics and Tobacco Terminal Supply Chain

2.1 The Basic Concept of Smart Logistics

Smart logistics is a new logistics model, and its core idea is to use modern technologies such as Internet of Things, big data and artificial intelligence to realize the intelligence, networking and informatization of logistics process. The rise of smart logistics provides unprecedented opportunities for supply chain management, which enables all links to cooperate more closely and realize efficient operation and rational allocation of resources.

2.2 The Concept of Tobacco Terminal Supply Chain

Tobacco terminal supply chain refers to the whole process of tobacco products from production to sales, including tobacco planting, production, warehousing, logistics, retail and other links. The coordination and connection between these links is very important to ensure the high quality, timeliness and traceability of products [1].

3 The Status Quo and Problems Analysis of Tobacco Terminal Supply Chain

3.1 Inventory Management Issues

In tobacco terminal supply chain, inventory management is an important link. Due to the particularity of tobacco products, inventory management is facing many challenges. First of all, the unreasonable inventory level leads to capital occupation and inventory backlog, thus increasing the operating costs of enterprises. Excessive inventory will occupy a lot of liquidity and reduce the capital turnover rate [2]. Secondly, low inventory may lead to out-of-stock phenomenon, which will affect the sales and customer satisfaction of enterprises. Tobacco enterprises need to make a reasonable inventory plan and make inventory adjustment according to market demand and product characteristics to ensure the balance between inventory level and market demand [3].

3.2 Transport Mode Problem

At present, the supply chain of tobacco terminal mainly depends on road transportation, and there are many problems in this single transportation mode. First of all, highway transportation is greatly influenced by weather and traffic conditions, and once it encounters bad weather or traffic congestion, the transportation efficiency will be greatly reduced. Secondly, the transportation cost of highway transportation is relatively high, which increases the operating burden of enterprises. In addition, the single transportation mode also limits the flexibility and toughness of the supply chain, making it difficult to cope with emergencies [4].

3.3 Storage Facilities

Tobacco storage facilities are generally outdated and management methods are lagging behind. Traditional warehouse management mainly relies on manual operation and simple information system support, which can not realize real time monitoring and accurate management of goods. This not only reduces the efficiency of warehouse management, but also increases the risk of loss and damage of goods [5]. At the same time, the backwardness of storage facilities also limits the intelligent development of supply chain and cannot meet the needs of modern logistics.

3.4 Information Communication Problems

Poor information communication is another major problem in the supply chain of tobacco terminal. The information communication between all links often depends on traditional manual methods such as telephone and mail. The problem of untimely, inaccurate and incomplete information transmission is more prominent, which easily leads to mismatch between supply and demand, thus wasting resources and time [6]. In addition, the lack of a unified information platform also limits the coordination efficiency and information sharing among all links.

4 The Optimization Strategy of Tobacco Terminal Supply Chain From the Perspective of Smart Logistics

From the perspective of smart logistics, the optimization of tobacco terminal supply chain needs to start from many aspects, including joint inventory management, transportation mode optimization, warehouse management optimization and information communication improvement.

4.1 Joint Inventory Management

Joint inventory management is an advanced inventory management model, which aims to realize information sharing and cooperative operation among all links. In the tobacco terminal supply chain, by establishing a joint inventory management system, inventory costs and risks can be reduced, and more accurate inventory control can be achieved. Joint inventory management can use technologies such as big data and forecasting model to analyze sales data and market demand in real time, so as to determine the inventory level more accurately and avoid the problem of excessive inventory or insufficient inventory.

When implementing joint inventory management, it is necessary to establish a cooperation mechanism and information sharing platform within the tobacco industry. Through this platform, all links can share inventory information in real time, make inventory plans together, and realize the dynamic adjustment of inventory level. In addition, joint inventory management can also promote cooperation and communication among all links and enhance the stability and reliability of the supply chain.

4.2 Optimization of Transportation Mode

Transportation is one of the important links in the tobacco terminal supply chain, and its optimization can improve the efficiency and flexibility of the whole supply chain. In terms of transportation mode, tobacco enterprises can adopt a combination of various transportation modes to adapt to different market demands and traffic conditions. In addition to road transportation, other modes of transportation such as railway and aviation can be selected and matched according to the actual situation.

By introducing intelligent dispatching system and real-time traffic information monitoring, real-time monitoring of traffic conditions and dynamic adjustment of transportation plans can be realized. In case of emergency, the intelligent dispatching system can also quickly re-plan the transportation route to ensure that the goods arrive at the destination on time.

4.3 Warehouse Management Optimization

Warehouse management is another key link in tobacco terminal supply chain. In order to improve storage efficiency and reduce costs, tobacco enterprises can introduce advanced storage management systems and technologies. Automation equipment and robots can be used to improve the warehousing efficiency and cargo handling speed. Real-time monitoring technology and Internet of Things equipment can realize real-time tracking and management of goods and improve the intelligent level of warehousing. Using advanced shelf system and classified management methods can improve the space utilization rate of warehouses and the quality of goods storage. In addition, strengthen the safety management of warehouses, such as installing security monitoring systems and fire-fighting facilities, to ensure the safety and integrity of goods.

4.4 Information Communication Improvement

Information communication is an important basis for efficient operation of tobacco terminal supply chain. In order to improve the efficiency and accuracy of information communication, tobacco enterprises need to strengthen information construction and establish a unified information platform or data warehouse. Through this platform or data warehouse, information can be transmitted and shared in real time among all links, and the matching degree between supply and demand and the market response speed can be improved. In addition, it is also necessary to strengthen the cooperation mechanism among all links. We can establish a collaborative office platform or adopt tools such as supply chain collaboration software to improve the cooperation efficiency and work quality of all parties, so as to improve the operation efficiency and service level of the whole tobacco terminal supply chain.

In the improvement of information communication, we also need to pay attention to information security and privacy protection. Establishing a perfect information security mechanism can ensure that the information in the supply chain will not be leaked or tampered with. Protecting the business secrets of all parties and the private information of customers will not be leaked, which is one of the key factors to maintain the stability

and reliability of the supply chain. Therefore, it is essential to strengthen information security management and technical preventive measures.

5 The Management Strategy of Tobacco Terminal Supply Chain From the Perspective of Smart Logistics

5.1 Supply Chain Risk Management

Supply chain risk management is an important link in tobacco terminal supply chain management. From the perspective of smart logistics, the tobacco industry can strengthen risk management through the following measures:

(1) Risk identification

Use smart logistics technologies, such as Internet of Things and big data, to monitor and identify potential risk factors in real time. For example, through data analysis, it is found that excessive inventory backlog or high transportation cost may bring business risks to enterprises. At the same time, the risk factors of the external environment, such as natural disasters, changes in policies and regulations, and market fluctuations, are continuously tracked and identified.

(2) Risk assessment

After identifying the potential risks, the tobacco industry needs to conduct a comprehensive risk assessment. This includes analyzing the probability, impact and urgency of risks. Using smart logistics technology, enterprises can obtain more data and information, so as to evaluate the nature and degree of risks more accurately. By establishing a risk assessment model, enterprises can determine the priority of dealing with risks and provide decision support for subsequent risk control.

(3) Risk control

In terms of risk control, the tobacco industry can conduct real-time risk control through the data and information provided by smart logistics technology. For example, inventory analysis based on big data can help enterprises plan inventory level reasonably and avoid the phenomenon of inventory backlog or shortage. At the same time, the real-time monitoring of the transportation process through the Internet of Things technology can find possible problems in the transportation process in time and take corresponding measures to reduce transportation risks. In addition, enterprises can jointly cope with risks by establishing close partnerships.

5.2 Big Data Applications

Big data applications can help the tobacco industry to better manage and optimize the supply chain. From the perspective of smart logistics, the tobacco industry can take the following measures:

(1) Data collection and integration

Establish a sound data collection and integration system through smart logistics technologies, such as the Internet of Things and big data. This includes obtaining and integrating a large amount of data from all links of the supply chain, such as inventory data,

sales data, transportation data, etc. Through real-time data collection and integration, the accuracy and timeliness of data are ensured, which provides a basis for subsequent data analysis.

(2) Data analysis and prediction

Use big data analysis technology to deeply mine and analyze the collected data. This can help enterprises identify potential efficiency improvement points in the supply chain, such as optimizing inventory level and improving transportation routes. At the same time, through data analysis and forecasting technology, enterprises can understand market trends and consumer behavior, and provide support for making more accurate production plans and supply chain strategies.

(3) Data-driven Decision-making

On the basis of data analysis and prediction, the tobacco industry can make more scientific and reasonable decisions. Data-driven decision-making can reduce the subjectivity and blindness in the decision-making process and improve the accuracy and effectiveness of decision-making. Through the real-time data and information provided by smart logistics technology, enterprises can formulate more targeted supply chain strategies according to market demand, inventory level and production capacity.

5.3 Application of Artificial Intelligence

Artificial intelligence technology plays an important role in tobacco terminal supply chain management. From the perspective of smart logistics, the tobacco industry can take the following measures:

(1) Optimize the production plan

The tobacco industry relies more and more on the innovative application of artificial intelligence technology in response to market demand fluctuations and inventory management. Using artificial intelligence technology can optimize tobacco production plan, and artificial intelligence algorithm can realize efficient production plan, so as to balance supply and demand, reduce production cost and improve overall benefit. The following is to explore how to give full play to the role of artificial intelligence in production planning optimization and create a smarter and more efficient tobacco supply chain.

(2) Inventory management and transportation scheduling

Artificial intelligence technology can analyze information such as inventory and traffic conditions in real time to optimize inventory management and transportation scheduling. This helps to reduce inventory costs and improve transportation efficiency. By analyzing historical sales data and market trends through artificial intelligence algorithms, enterprises can make more accurate inventory plans and transportation scheduling schemes. In addition, artificial intelligence can also provide flexible transportation route adjustment scheme according to real-time traffic information to cope with the impact of sudden traffic conditions on transportation.

6 Conclusion

From the perspective of smart logistics, this study deeply studied the current situation and problems of tobacco terminal supply chain, and put forward a series of key optimization and management strategies to promote the sustainable development of tobacco industry. By adopting comprehensive measures, such as joint inventory management, transportation mode optimization, warehouse management improvement and information communication improvement, the tobacco terminal supply chain can operate more efficiently, flexibly and intelligently. These strategies not only improve the market response speed and reduce the cost, but also improve the customer service experience and enhance the competitiveness of tobacco enterprises. At the same time, the introduction of big data and artificial intelligence technology further improves the intelligence level of the supply chain, which helps to better understand the market demand, achieve a balance between supply and demand, reduce inventory risks, and improve resource utilization efficiency. The application of these technologies in production planning, inventory management and transportation scheduling provides important support for enterprises to achieve more efficient production and supply chain management. In addition, supply chain risk management has also been fully concerned in the study, enabling enterprises to better cope with external risks such as natural disasters, changes in policies and regulations and market fluctuations.

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