

Study of Mode Function of the Logistics Enterprise and Methods of Inventory Control

Xue Min

Department of Management, Guangdong University of Science & Technology, Dongguan 523083, China

Abstract

The main research direction is different enterprises according to their analysis of the advantages and disadvantages of the different logistics mode can be selected with good logistics form, in order to achieve the purpose of maximizing corporate profits. By contrast, respectively referenced real case specific analysis of two logistics mode, and summarize their advantages and disadvantages. Meanwhile This part sets out to explore the basic concepts behind the inventory holding decision, as well as the basic method of inventory control.

Keywords: *self logistics, outsourced logistics, hybrid logistics mode, inventory control, inventory management method*

1. Introduction

Business activities, an important goal for each enterprise in terms of business is based on the minimum investment for maximum benefits. However, in today's conditions, the cost of production has been compressed to a certain extent, it is particularly important as "the third profit logistics cost control". As an important part of the logistics industry, penetrate into all their business activities, its model is also different. The only choice for different enterprises, the logistics models suited to their own conditions, in order to achieve optimal profits.

At present, there are mainly self-logistics and outsourcing logistics model. Both logistics model has its own advantages and disadvantages, for better analysis to the comparative study of the two modes. One of the most important aspects of logistics concerns questions related to inventory. The amount of inventory that should be held and its location within a company's logistics structure is vital in order to meet customer service requirements and expectations. But, it is vital to get right this balance of service versus cost. This part sets out to explore the basic concepts behind the inventory holding decision, as well as the basic method of inventory control.

2. Major Logistics Mode

2.1 self-logistics mode

Self logistics mainly refers to industrial enterprises in the logistics business, while its main source of income is not

the logistics. Self logistics system, the most typical is the Haier Group.

Haier Logistics characteristics can be summed up as, with the strength of the logistics professional company, self based on outsourcing, the overall procurement JIT (just in time, just-in-time production management), raw materials and distribution JIT. JIT the synchronization process and finished goods distribution. 1999, Haier implemented as a link to the market chain business process reengineering, order information flow, driven by the operation of the logistics, business flow, capital flow and logistics operation mode increasing cause for concern. Terms of Haier, logistics first target is to get three "zero", that is, zero inventory, zero distance and zero working capital; Secondly, to enable them to obtain the core competencies in market competition to win.

If Haier logistics as to reduce the cost of the machine, the U.S. group put the logistics as a money-making machine. Midea Group was established in January 2000 the the Andhra logistics company, spun off the logistics business. Division Andhra logistics company as Group is an independent, third-party logistics companies other beauty products division, on the one hand to provide the most efficient logistics services for the beautiful production, manufacturing, sales, as well as a professional logistics company out business development.

As can be seen by the above-mentioned cases, enterprises import and strong ability to control all aspects of the logistics supply chain. Easy production and other business links closely with full service in the operation and management of the enterprise, to ensure that companies have access to long-term and stable profits. For a highly competitive industry, is conducive to the control of supply and distribution channels, reasonable planning and management processes, improve the efficiency of logistics operations, reduce circulation costs. For larger single product enterprises, import and logistics can make logistics and capital flow, information flow, business flow with more closely, thereby greatly Tinan logistics operation is the far side price work efficiency. Can make the raw materials and spare parts procurement, distribution, and production support from the strategic integration, to achieve the procurement time, increase the batch.

Reduce bulk, inventory-control, to reduce the amount of funds used to reduce the cost, in order to achieve zero inventory, up close and military working capital.

Import and logistics model while the size of the business situation, there are certain requirements: self-logistics enterprises increased burden on business investment, weaken the ability to withstand market risks. Companies in order to self-logistics, we must invest a lot of money for storage equipment, transport equipment, and human capital, which will inevitably reduce the enterprises of other members to be part of the investment, weaken the market competitiveness of enterprises. In this case, the enterprise self logistics is equivalent to forcing companies to engage in not good at business activities, corporate management often takes too much time, energy and resources to engage in supporting the work. Results foot auxiliary on no arrest, the business of the key pieces of hair can not be stuck to the central role of nail limited scale, the degree of specialization of logistics is very low, the cost is higher.

Only like Haier, Midea such a large scale, economic conditions, the strength of the company management to control; some smaller businesses, to logistics proportion of investment is too large and lead to business can not function properly. For small businesses. Wear a limited number of its production, white business logistics, not the formation of scale. The one hand lead to the Bureau of logistics costs over products: the lower the competitiveness of the market die; another - aspects, due to the limited size, the degree of specialization of logistics is very low, and can not meet the needs of the enterprise.

2.2 outsourced logistics mode research

Outsourcing logistics, production or sales enterprises to concentrate and enhance core competitiveness, and its logistics business to operate in a professional logistics company, is a long-term contract commissioned strategic mutual penetration, mutually beneficial business commissioned and contract execution. The trend of economic globalization, the logistics outsourcing as a material circulation speed, to save on storage costs and reduce the effective means of transit funding backlog can really bring more revenue to the supply and demand sides. Electrolux Logistics completely outsourced to a third-party logistics companies, third-party logistics providers to provide them with the whole or any part of the supply chain logistics services, in order to obtain a certain profit. 1995, Electrolux Italy Refrigerator Co., Ltd. joint venture, a clear division of responsibilities, Electrolux is only responsible for production, while Italian refrigerator plant solely responsible for the sales and after-sales service of the product. Subsequently, of Electrolux in turn logistics outsourcing to a professional PG Logistics company. Electrolux Logistics referred to the PG Logistics

Group, including the three logistics company responsible for. This logistics model does not take up a lot of fixed assets, and more freedom to coordinate production operations, strengthening the flexible management of the enterprise, so that enterprises can focus on improving the core competitiveness.

This model also has its own shortcomings: the companies can not directly control the master logistics functions, and can not guarantee the arrival of good quality and customer service in a timely manner, give a third party logistics third profit source, reducing their profits. In addition, companies also need to bear the risk of inefficient logistics company, but with the constant improvement of the services of the third party logistics enterprises, more and more companies have chosen this logistics model.

China's logistics market has considerable development potential for third-party logistics will be promising. Compared with developed countries, the overall level of China's logistics industry is still in its infancy, the industry is not highly competitive logistics market in the state is to be developed to a greater extent. National Warehousing Association 2000 survey data analysis, the majority of the Chinese logistics needs are not yet market-oriented production enterprise procurement logistics, the use of third-party logistics business logistics only 18% and 5.9% respectively, even the use of third-party logistics companies, the actual logistics outsourcing is only about 50%.

In summary, the enterprises both select what kind of logistics system analysis should be carried out according to the own scale, demand, economic and management strength, select the more suitable for their current situation and future development of the logistics. Logistics has become a powerful tool for enterprises to reduce costs, increase profits, rather than become a heavy burden for the development of enterprises.

3. Inventory Management Control Methods

Inventory Control (Inventory Control) is a manufacturing or service production, management of the whole process a variety of items, finished goods and other resources to manage and control, it reserves to maintain a reasonable level in the economy. Inventory control inventory control is the use of methods to get higher profitable business tool. The main function of inventory control are: to ensure the production, management requirements under the premise that stocks always kept at a reasonable level; master inventory dynamics, timely, appropriate proposed order to avoid excess reserve or out of stock; reduce inventory space occupied, reducing the total cost of inventory; inventory control of funds used to accelerate cash flow.

3.1 The classification of inventory management - ABC classification management approach

ABC classification management approach is to inventory divided by the degree of importance of particular importance to inventory (A class of stock), the general importance of inventory (B class stock) and unimportant inventory (C Class inventory) three level, and then for different level of management and control, respectively. ABC classification management method consists of two steps: First, how to classify, the second is how to manage. In the ABC classification of inventory is followed business strategy is based on different levels of the different inventory management and control.

3.2 CVA Management Act

CVA (Critical Value Analysis) Management Act is the key factor analysis. The basic idea is to inventory in accordance with the key into 3-5 categories, namely:

- (1) the highest priority - this is the key to hard materials, not out of stock.
- (2) a higher priority - This refers to the operating activities of the foundation material, allow the occasional out of stock.
- (3) Medium priority - mostly the more important of these materials, allowing a reasonable range of stock.
- (4) a lower priority - operators of these supplies required, but substitutability is high, allowing stock.

3.3 the procurement EOQ model - to determine the number of orders

That the number of enterprises per order is directly related to inventory levels and the size of the total cost of inventory, so companies have to expect to find a number of orders when the inventory is its total production of the smallest EOQ model can meet this requirement. By balancing the procurement is the purchase cost and storage warehousing costs, determining an optimal order quantity to achieve the lowest total inventory costs. EOQ model according to need and order, the arrival time intervals to determine whether the conditions in the state can be divided into the model and determine the conditions under probabilistic model.

3.4 inventory management

Supply chain management procurement and timely procurement, also called JIT procurement are ultimately want to achieve enterprise supplies the "zero inventory" management in order to ensure that the material supply and product distribution smoothly and achieve business benefits maximized.

"Zero inventory" management is the material storage optimization theory that warehouse management theory in practice in the use of it does not mean that all enterprises of raw materials, semi-finished product inventory is zero, but rather to ensure the smooth progress of production and operation activities of conditions, using a variety of scientific management methods, a reasonable calculation

of inventory and effective control, as a way to reduce inventory levels. Zero inventory does not mean not to reserve and without reserve, that some do not set up a separate operating entity and stockpiles of materials does not mean that other forms of storage activities canceled.

The Methods to achieve zero inventory enterprises are: display production management, order production methods, punctual procurement, collaborative subcontracting, bailment way, production processes synchronization mode, tap mode, no inventory reserves and supply chain and distribution methods.

Inventory control should be related to the company's financial operations objectives, in particular operational cash flow by optimizing the entire demand and supply chain management processes (Supply Chain Management Processes, DSCMP), a reasonable set of ERP control strategy, supported by appropriate information processing tools, tools to achieve to ensure timely delivery of the premise, reducing inventory and obsolescence, the risk of devaluation. In this sense, the physical inventory control just to achieve our financial goals as a means of controlling the entire inventory or just a necessary part; from the perspective of organizational functions, physical warehouse inventory control is mainly the responsibility of management, the broad inventory control should be the entire demand and supply chain management, and the whole company's responsibility.

The problems arising from excessive inventory: Increase storage space and inventory storage costs, thereby increasing the cost of the product; take up a lot of liquidity, resulting in sluggish capital, not only increased the burden of loan interest, etc., and will also affect the time value of money and the opportunity revenue; finished products and raw materials caused tangible and intangible loss; caused a lot of idle corporate resources, affecting their rational allocation and optimization; mask production, management of the whole process various contradictions and problems, is not conducive to enterprises to improve their management level.

However, Inventory of the problems arising from too small: cause degradation of service, affecting sales profits and corporate reputation; resulting in the production of raw materials or other material supply system, which can affect the normal production process; make ordering interval shortened, the number of orders increased, so order (production) costs; affect the balance of the production process and the assembly of complete sets.

4. Conclusions

Diversified in the consumer market, the personalized needs of today's rapidly changing social needs and

technology advances, mass production manufacturing enterprises have been unable to meet the demand of the market development. The differentiated marketing flexible production has become the future development trend, enterprises must adopt more variety, less bulk, multiple batches of logistics strategy, if companies want to implement for the purpose of improving service logistics management purpose, the the dispersion of the logistics operations will be further expanded, decentralized logistics operations will be offset against the benefits of system management. Therefore, the value of the combined scale advantages of the outsourcing of logistics operations and logistics system self management, some non-core logistics operations outsourcing entire logistics system enterprise self-operating “outsourcing job functions and system management self” mixed logistics model, should be the main mode of the future development of logistics. The reasonable inventory control methods help sustainable development of enterprises, reducing capital occupied, improve operational efficiency, enhance their market competitiveness.

References

- [1]Guangqiang X, Yang L. Extension Data Mining Knowledge Representation. *Physics Procedia*, 2012,24: 240-246.
- [2]]Brian Hoyle, Richard Knowles. *Modern Transport Geography*, Chi Chester. UK: John Wiley & Sons, 1998:21-23.
- [3]O. Khan,B- Burnes. *Risk and Supply Chain Management: Creating a Research Agenda*.The International Journal of Logistics Management. 2007: 302- 321.
- [4]Ceselli A, Gatto M, Lubbecke M E, et al. Optimizing the cargo express service of swiss federal railways. *Transportation Science*, 2008, 42(4): 450-465.
- [5]Spulber, D. F. Second best pricing and the core. *Rand Journal of Economics*.1996,17(2):239-250.
- [6]DROR M, POWELL W. Stochastic and dynamic models in transportation preface,*Operations Research*, 1993,41(1):11-14.
- [7]Malmborg, Charles. Genetic algorithm for service level based vehicles cheduling. *European Journal of Operational Research*, 1996,93(1):121-134.
- [8]Sherman, R. M,Visscher. Second Best Pricing with Stochastic Demand, *American Economic Review*. 1998,68(3):41-53.
- [9]Pashing, P. Limit Price and the Market Share of the Leading Firm, *Journal of Industrial Economics*. 1998,16(7):165-177.
- [10]Daskin, M. *Network and discrete location, models, algorithms and applications*. John Wiley & Sons, New York. 1995.
- [11]Ogryczak W, On the distribution approach to location problems. *Computers & Industrial Engineering*, 1999,37(3):595-612.
- [12]GClarke and J.VWright. Scheduling of vehieles from a central to a number of delivery points.*Operations Research*, 1994,12:568-581.
- [13]FullerJB, Conner J, Rawlinson&Tailored logistics: the next advantage. *Harvard BusinessReview*. 1993.71(3):87-98.
- [14]Harris F W. How many parts to make at once. *Operations Research*, 1990,38:947-950.
- [15]Crainic, T. G, Ferland, J-A. and Rousseau,J-M. A tactical planning model for rail freight transportation. *Transportation Science*, 1984,18(2):165-184.
- [16]Hoek R. I. The Role of Third. Party Logistics Providers in Mass Customization.*International Journal of Logistics Management*. 2000. 11(1):37-46.
- [17]PALLOTTINOS. Shortest Path Methods: Complexity, Interrelation and New Propositions.*Networks*, 1994,14:257-267.
- [18]Petra Perner. *Data Mining-Concepts and Techniques*. KI, 2002, 16: 20-21.
- [19]Dantzig G B, Ramser J H. The truck dispatching problem. *Management science*, 1999, 6(1):80-91.
- [20] Vaisman A A, Mendelzon A O, Ruaro W, et al. Supporting dimension updates in an OLAP server.*Information Systems*, 2004, 29(2):165-185.
- [21]Andreas Klose,M. Grazia Speranza Luk N. Wassenhove. *Quantitative approaches to distribution logistics and supply chain management*. Springer, 2005:93-97.
- [22]LucianaDalla Valle, Dean Fantazzin, Paolo Giudici.Copulae and OperationalRisks[J],*International Journal of Risk Assessment and Management*, 2008 (9) :238-257.
- [23]R.W. Taylor.Logistics Risk in The Stryker Brigade Combat Team. *Army Logistician* .Retrieved April 20,2008.
- [24]R. Williams,B. Bertsch,B. Dale, etc.Quality and Risk Management: What are the KeyIssues. *The TQM Magazine*. February 17, 2006.
- [25]Munuzuri J,Cortes P, Onieva L, et al. Modelling peak-hour urban freight movements withlimited data availability. *Comput Ind Eng*, 2010,59(1):34-44.
- [26]Silas M A, Holguin-Veras J, Jara-Di'az S. Optimal distribution of financial incentives to foster off-hour deliveries in urban areas. *Transportation Research Part A: Policy andPractice*, 2012,46(8):1205-1215.