

# Study on Selection of Logistics Mode for Enterprises Based on Transaction Cost

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## Abstract

The logistics mode plays a critical part in the success or failure of the enterprise logistics operation. It effects enterprise's whole state of operation. The transaction cost theory not only may be applied to the enterprise fundamental theory research, may also be applied to the process of choosing enterprise logistics mode. Based on the analysis of three types of logistics mode for enterprises from transaction cost angle, such as the Self-conducting Logistics mode, the Third Party Logistics mode and the Integration Logistics mode, this paper has pointed out the respective usable condition.

**Keywords:** Logistics Mode, Self-conducting Logistics, Tthe Third Party Logistics, Integration Logistics, Transaction Cost

## 1. Introduction

Along with the development of economic, logistics has already become one of the key factors in the success or failure of enterprise and the suitable logistics mode is the premise of success. Many factors will influence the choice of logistics mode. This paper discusses the question of logistics mode's choice question based on the transaction cost theory.

## 2. Review of transaction cost theory

Coase who was a British economist proposed the transaction cost theory by, but he did not give systematic explanation to the reason of transaction cost and its determining factor. Followed him, Williamson researched the determining factor of transaction cost systemically. Williamson thought that human was "limited rational"; at the same time, human was not only selfish, moreover, so long as it can benefit themselves, they would do not hesitate to harm others. Human's this natural instincts is called opportunism. The opportunists, when it is possibly to increase their profit, will dare to violate any warns, will send out distorted information to mislead other people intentionally, and will intend to make the information anisomerous. In this kind of situation, adopting measure to hold back opportunistic behavior is economic significant to economics and will bring out new cost.

Williamson has studied the determining factor of transaction cost from three dimension. The first factor is asset specificity, it implies that it is difficult to move the resource for other use after it is used in some specific use. This nature has different degree in different resource and in different use. The second determining factor is uncertainty of transaction, which is the primary reason for the "limited rational", including accident's uncertainty which can be forecasted, but the cost is very high for the forecast of the uncertainty or doing some measure to hold it back. The third determining factor is the frequency of transaction.

Although the transaction cost theory is mainly used in the enterprise theory and the organization behavior theory, the property right economics and the legal economics, its related conception and the method are suitable for analyzing the logistics mode's choice of enterprise.

## 3. The transaction cost analysis and choice of enterprise logistics mode.

### 3.1 The alternative logistics modes

Logistics mode refers the basic philosophy in the process of enterprise's logistics operation. It is the organic complex compound of the type of organization, operation mechanism and guarantee system. Generally, the main modes

include the Self-conducting Logistics mode, the Third Party Logistics mode and the Integrated Logistics mode.

The Self-conducting Logistics mode refers the enterprise establishes logistics system which is suitable for its own management characteristic depended upon its own resources. The enterprise finishes all work from the purchase of raw material to the finished product production, the storage, the processing, the packing and the transportation by itself. The self-conducting logistics mode requests the enterprise with high operation level, it requests the enterprise can efficiently combine the product fluxion, commercial fluxion and information fluxion together .then it can display the self-conducting logistics' superiority fully.

The Third party logistics (3PL) mode refers that the enterprises focuses on its principal work outsources the logistics work which was done by itself originally. The enterprises can manage and control all the logistics process efficiently by communicate with the logistics service enterprise, through the information system . This kind of logistics activities which undertook by the third party may contain the entire logistics flow or some parts of it.

The Integrated Logistics refers the enterprise's logistics activity is partial outsourced to the third party logistics enterprises and partially is operated by themselves.

### *3.2 The transaction cost of enterprise logistics operation*

From seeking for the transaction partner to the logistics business's completion, the enterprise will afford the following transaction costs:

#### *3.2.1 Search cost*

The enterprise needs to seek for the partners which can provide service to it, but the enterprise is nor sure about the possible partners' serviceability, prestige and so on various aspects of information. The information is asymmetrical. The enterprise needs to spend certain manpower, physical resource and financial resource in collecting and evaluating the related information.

#### *3.2.2 Negotiations cost*

After choosing partners, the enterprise needs to carry on the consultation negotiations with the partners. In the negotiations process, all quarters hope to obtain one advantageous result, so they will bargain back and forth. Then the negotiations cost becomes the cost could not be neglected in the process of choosing logistics mode.

#### *3.2.3 Performance cost*

Whether the collaborators can fulfill the agreement according to the contract standard has some risk. Unconsistency will accompany with the implementation of contract and cause losses. Taking measure to minimize this kind of loss also need to pay cost.

#### *3.2.4 Risk cost*

The stability and security of cooperation are very important to the enterprise. Any one of the collaborators' significant adjustment about equipments or products will influence other collaborators badly and causes cost increasing. This kind of influence possibly will even be ruinous sometimes.

#### *3.2.5 Other cost*

It mainly includes those cost increased by the factors impossibility to be forecasted, such as natural disaster.

### *3.3 Analysis of factor influencing transaction cost*

The paper analyzes transaction cost from asset specificity, the uncertainty and frequency of transaction.

#### *3.3.1 Asset specificity*

If the enterprise's investment has no asset specificity or the level of asset specificity is very low, then when one side of the trade has opportunistic behavior, another side will find right replacer in the market easily, so the loss will be limited,if the asset specificity level is very high, it will be very difficult for the enterprise to find appropriate transaction replacer, the investment property was also very difficult to be moved for other use, even if it can be used again, the sunk cost will be tremendous. Moreover the feature of asset specificity determined transfer quantity should be stable and continual. In brief, the existence of asset specificity enabled the opportunism behavior to be possible, moreover the higher the asset specificity level the more possible to be coerced for the enterprise. Therefore, higher the asset specificity level is, closer the enterprise should pay attention to the Self-conducting Logistics mode.

#### *3.3.2 The uncertainty of transaction*

Higher the uncertainty of transaction level is, huger the possible performance cost and risk cost will be. So the logistics mode should trend to marketised mode.

### 3.3.3 The frequency of transaction

The frequency of transaction has huge influence to transaction cost. When the times of transaction are limited, then the scale of investment is increased invisibly. The frequent transaction is advantageous in sharing investment, moreover the frequent transaction can increase the understanding and the trust between all collaborators and reduces the opportunism behavior, then the transaction cost reduces greatly. The relation between transaction cost and the times of transaction is implied as figure 1 (TC is transaction cost, N is the times of transaction).

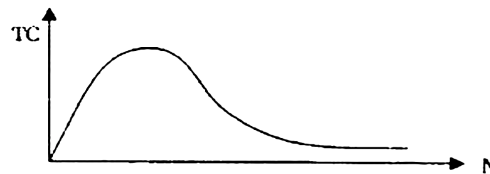


Figure 1. Graph of the relation between transaction cost and the times of transaction

### 3.4 Analysis of enterprise logistics mode's transaction cost and the choice of mode

If the asset specificity level is low, the enterprise could adopt the self-conducting logistics mode or those marketized mode.

The Third party logistics mode can decrease transaction cost effectively compared to the traditional one to one logistics mode from the following aspects: (1) An enterprise only needs to cooperate with several even one logistics service enterprise, thus the logistics link can be able to reduce as far as possible, the search cost was reduced greatly; (2) The logistics service provider provides service according to the enterprise, thus the customer keeps closely communication with facilitator. Both sides can know more well about each other, thereby, risk cost, negotiation cost and superintends cost are reduced; (3) The Third Party Logistics is one kind of long-term cooperative relation, so opportunism behavior occurrence possibility will be reduced, thereby, performance cost will be reduced effectively. But choosing the Third Party Logistics has a premise, which includes the asset specificity level and the uncertainty of transaction should be low. Otherwise the enterprise will suffer gigantic loss because of opportunism behavior.

We know from above that if the asset specificity level is high and the frequency of transaction is low the enterprise should adopt self-conducting logistics mode to take precautions for opportunistic behavior. At the same time the Organization cost will increase greatly. So the enterprise should compare Organization cost with transaction cost when it attempts to choose a logistics mode. The logistics mode chose should be able to win more net earnings than other logistics modes.

The cost of market-driven relocation of resources is expressed by  $C_m$ , namely the transaction cost. The integral organization's organization cost is expressed by  $C_f$ . The profit of market-driven relocation of resources is expressed by  $B_m$ . The profit of organization integrated is expressed by  $B_f$ . If  $C_m > C_f$  and  $B_m > B_f$ , looked from the transaction cost angle integral organization has advantage, but looked from the benefit angle the profitable way is market-driven relocation of resources. But  $C_m > B_m$  and  $C_f > B_f$  indicated that either the way of market-driven relocation of resources or the way of enterprise-driven relocation of resources is not feasible. In such a case, the enterprise might adopt Integrated Logistics mode, the enterprise can deal the part which has high asset specificity level with Self-conducting Logistics and deal the part which has low asset specificity level with the Third Party Logistics

## 4. Conclusion

In summary, asset specificity, the uncertainty and frequency of transaction all effect the transaction cost and are key factors in the process of choosing logistics mode. In the actual operations, the enterprise should also consider some other factors such as the quality of service. The enterprise should combine its own production characteristic and the market characteristic to choose logistics mode, at the same time, it should consider the subject range and advantage of every logistics mode. On the other hand, the enterprise must reform itself combining with the existing production and the sales model, analyze the feasibility and profit scientifically of every logistics mode, seek for the optimal combining site of production, sales and logistics. In addition, internal and external resource condition of the enterprise is also the factor influencing the choice of logistics mode.

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