



## Study on the Cost Management Based on the Cooperative Value Chain

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### Abstract

The competition among modern enterprises has not been the competition about single enterprise, but the competition among the value chains and the enterprise needs to strengthen the competitive ability by the cooperation. Based on developing Porter's value chain, the opinion that the whole value chain contains the upper suppliers and the lower dealers was proposed, and how to achieve the optimal cost management by the cooperation between the upper and lower enterprises with the homogenous enterprises was further explained in the article. In addition, some risk costs which may occur in the cooperation process and how to implement cooperative harmony were analyzed, and according to the analysis results, the enterprise could keep away from these risks in advance.

**Keywords:** Cooperation, Value chain, Cost management

### 1. Introduction

The generation of the value chain is the result of the competition that enterprises pursue different competitive strategies. To enhance the strategy of the enterprise, American strategic management scholar Porter (1985) first put forward the method of the value chain analysis. He thought that the value chain was the combination of a series of associated valuable activities of the enterprise. According to Porter's theory of the value chain, the "cost chain" corresponding with the valuable activities exists on the value chain (seen in Figure 1). Starting from the expense devotion for the product R&D, the preparation before the production, and various consumptions in the making process, until to establishing the sales channel, marketing and distribution output and expenses after service, this "cost chain" supports various activities on the value chain to be developed effectively to increase the values of the product and fulfill clients' demands. As the comprehensive consumption index of the value chain activity, the cost is represented by a sort of form of "negative increment". The value chain cost management is to manage the "cost chain" on the value chain of the product, eliminate the activities without increments or with low efficiencies, reduce the amount of "negative increment", minimize the costs on the whole chain, enhance the efficiency of the whole supply chain, and make the enterprises on the chain all win.

In the drastic competition of the market, enterprises find that only the interior cost control has not fulfilled the consumers' demands for the product cost, so they begin to seek how to reduce their operation costs and acquire the one-up advantage of cost by means of others' strengths, which offers the market environment for the occurrence of the value chain system and is the interior power to establish the cooperative relationship among enterprises (Li, 2002, P.30-31). The generalized value chain management received Porter's concept of value system, and Porter thought that the value system was composed by the enterprise value chain, supplier value chain, channel value chain, purchaser value chain and the operation unit value chain of the homogenous enterprises. The concept of the value system begins to be utilized by enterprises with the development of the economic globalization.

Under the guidance of thus ideas, the competition among enterprises has not been limited only in the interior of the enterprise. The value chain of the enterprise begins to participate in the market competition as a strong aggregation which is the value resource plan taking one core enterprise surrounded by other enterprises as the axis point, and the plan continually solidify the stability of the system by the cooperation among enterprises. Therefore, it is very meaningful to study how to strengthen the value chain cost management by the cooperation.

## 2. Literature review

English scholar Simmonds (1981) put forward the concept of the SMA (Strategic Management Accounting), and he thought that the accounting should learn from the exterior, which would help the company to evaluate its competitive status. The enterprise is an opening system, and the management accounting should pay more attention to study the exterior environment, understand the competitive cost structure of the enterprise, and notice the cost competitive status of the enterprise relative to competitors.

American management accounting scholars Shank and Govindarajan (1989) agreed that viewpoint, and further developed the range of the value chain based on Porter's value chain theory (1985), and they defined the value chain as "the value chain of any company contains the whole process of the value production activity". This process includes the whole course from the initial suppliers receive the raw materials to the finished products are sent to the users. The interior value chain of the company associates with the supplier value chain by the stock activity, and associated with the client value chain by the sales and after service activities, so the whole value chain forms. So the advantages of the enterprise can not only root in the adjustment of the market range involved by the value activities, but root in the harmony among enterprises or the optimized benefits brought by using the value chain together.

In addition, the node enterprises which participate in the whole value chain analysis possess common value orientation, and they can share sensitive information and effectively harmonize and manage the relationships among the node enterprise on the supply chain, which can not only increase the trust each other among cooperators, enhance purchasers' receiving efficiency and reduce the stock-in-trade and the cost of the supply chain, but make the activities with same type more effective for the node enterprise on the supply chain, and accordingly enhance the operation efficiency of the whole value chain for the company (Dekker, 2000, P.41-52), and attract more enterprises in the value chain to join the enterprise alliance in the future, and help the company to implement the whole value chain analysis in the larger range. Therefore, it is very important to cooperate and harmonize with node enterprises, and share the information about the cost and performance relative to the value chain for the company.

With the deepening and utilizing of the value chain theory in enterprises, this theory has gradually been the dominant idea for the multiform enterprise to instruct its strategy. By the drive of the economic globalization, by means of the cooperation among enterprises, the value system composed by the supplier value chain, the manufacturer value chain and the purchaser value chain emerges as the times require, and the value chain theory breaks the interior characters in the enterprise, and scholars attentions begin to turn to the whole value system form the single interior of the enterprise.

Dekker (2003) used the idea of the value management to analyze the value relation on the supply chain, and he analyzed the value and cost composing among the supplier, the manufacturer and the shopkeeper by taking the large-sized English retail enterprise as the example, and put forward the method of the value chain analysis, and established the chart model based on the value chain analysis. The cost control model of the classified supply proposed by him could offer referenced theoretical instruction for the enterprise cost control.

Dubois (2003) pointed out the influencing degree of the mutual function between the enterprise with other associated enterprises on the cost of the enterprise, and he researched the relationships among the key suppliers and key purchasers and other correlative enterprises, and the influencing degree to the cost of the enterprise based on the analysis of the concrete case, and he also pointed out that the association between the cost drive and the enterprises on the value chain, and established the base for the game analysis among enterprises.

Yu Fusheng and Di Congzhi (2004) utilized the theory of the value chain to deeply study the cost control, and defined the thought, objective and content of the cost control based on the value chain theory, and reconstruct the cost control system to effectively control the cost of the enterprise and strengthen the competitive advantage of the enterprise.

Liu Yijuan (2004) established the activity cost model to analyze the complete value chain to achieve the practice of the cost control through introducing and discussing how one English retail enterprise broke the boundary of the company, utilized the cost information of the node enterprises in the value chain and manage the mutual dependent relationship among all activities on the value chain, which indicated that the replacement of the past opposed relationship with suppliers by the mutual cooperation and consideration among node enterprises in the supply chain could harmonize the manage the activities in the supply chain, realize the cost control, enhance the operation efficiency and the performance of the supply chain.

Jiang Ximing and Cao Li (2004) analyzed the deficiencies of the present enterprise cost control from the view of the value chain, analyzed relationship among the interior value chain, the exterior value chain and the cost control, and established the cost control guarantee system based on the view of the value chain.

Based on former researches, we considered the whole value chain (including the upper enterprises and lower enterprises), and studied how the enterprise could achieve the cost optimization on the whole value chain by the cooperation based on the cooperative value chain cost management. At the same time, we combined the game thought with the general cost control method in the enterprise, considered the extension of the interior activity cost control

method for the enterprise, and studied the influencing degree of the risk induced by the game relationship to the enterprise strategy cost control.

### **3. The cost management based on the cooperative value chain**

When the range of the value chain management extends, the value system has not been only limited in the interior value stage in the enterprise, and it should surround the core enterprise, seek the cooperation from the upper and lower enterprises, control the information, materials and capitals, start from purchasing raw materials, making middle products and finished products, and sending products to consumers by the sales network. At the same time, the enterprise attracts exterior enterprises in the same industry to participate in the cooperation by means of the core ability to research, develop, design and sell the products together and reduce the operation consumption of the enterprise. The whole value activity connects the suppliers, manufactures, distributors, shopkeepers, final users, and the enterprises with homogenous benefits to be structure mode with complete function network system (seen in Figure 2).

#### *3.1 Cooperative cost management with suppliers*

As viewed from the value chain, the core enterprise and the supplier are in same value chain, and they are strategic partners. Only both sides fully cooperate, the maximum value and the win-win result can be achieved.

##### **3.1.1 Supplier participating in advance**

70%~80% of the product cost is confirmed in the design, so it is very important to seek the opportunity to reduce the cost in the development process of the product. The cooperation mode with suppliers' participation is adopted in the product development process, and its advantage is that the suppliers could know the materials needed in the development of the new product as soon as possible, implement the parallel development and reduce the cycle of the development. In addition, the suppliers could participate in the production of the core enterprise, give counsels for the enterprise, put forward advices to improve the production and reduce the cost.

##### **3.1.2 Confirming suppliers in advance**

Confirming the supplier in advance means to select suppliers in the design phase, and these suppliers are responsible for the components design or the engineering system design, and all works may not be charged by suppliers, but the rights and responsibilities should be defined clearly. The advantage of confirming suppliers in advance is to allow development multiple engineering designs, which could largely enhance the development speed of the product. Generally, the suppliers selected in the initial phase should not only participate in the components design, but assist the assembling of samples and charge for the components provision after the new product is pushed. Under the mode of confirming suppliers in advance, suppliers providing complex components should not only participate in the R&D process of the product as soon as possible, but answer for the product quality, production cost and optimization as the chief principals, and they should ensure to provide corresponding systems and components in time.

##### **3.1.3 Establishment of objective cost**

The basic principle of the objective cost method is to confirm the objective profit of the enterprise accruing to the price in the consumption market or the final consumers' payment price, and calculate the cost by the reverse operation to decompose the objective cost to confirm the supply cost or the production cost of various components. The objective cost of the core enterprise is supplier's upper limit of the price. The operation program under the new mode is to first confirm the capitals of the core enterprise, then tell the suppliers what they should do, and finally wait suppliers' answer whether they should bargain on according to the price proposed by the core enterprise. In the past, the core enterprise forced the suppliers to depreciate continually and never considered suppliers' benefits. In the new mode, the core enterprise will turn to the cost from the price, and build a win-win situation. The core enterprise and suppliers will cooperate closely to solve the problems about cost and technology, and the trust relationship between both sides will be confirmed.

#### *3.2 Cooperative cost management with dealers*

It will save transaction costs, avoid transaction risk and investment risk, enhance the efficiency of the repertory management and better serve clients for the manufacturer to select good lower cooperative enterprises and effectively cooperate with them. So the influence of the lower cooperative enterprises on the strategic decision for the core enterprise is more and more important.

##### **3.2.1 Cooperative repertory management**

For long, the repertory managements in various phases of the circulation run in their ways respectively. Manufacture, shopkeeper and merchant respectively have their repertories and make their repertory control strategies, which will inevitably induce the phenomena of "demand expansion". To share the information about the supply ability and repertory status with dealers can reduce dealers' worries, and if the manufacturer could help the dealer to make the order before the sales midseason, he will provide better design production ability and arrange production schedule to fulfill the demands of the product. Therefore, for manufacturers and lower enterprises' benefits, they will consciously adopt

the mode of united repertory to realize the alliance of both sides. In the united repertory, the popular mode is CPFR (Collaborative Planning, Forecasting and Replenishment), i.e. the manufacture and deal cooperate to plan, forecast and complement strategies, or utilize the game behaviors each other to reduce the transaction cost in the cooperation (Zhang, 2004, P.59-61 & Li, 2004, P.42-43).

### 3.2.2 United sales promotion strategy

The united sales promotion strategy is a sort of allied strategy between the deal and the core enterprise, i.e. in dealer's final sales phase, the dealer and manufacturer participate in the sale together according to their respective advantages to enhance consumers' satisfaction and extend their respective sales profits. The united sales promotion strategy is a sort of renovation for the traditional sales thinking. The basic thought of the united sales promotion strategy is that the core enterprise utilizes its advantage to participate in dealer's sales activity, for example, the core enterprise sometimes more knows how to put the product to stimulate consumers' purchase desire. In addition, the united R&D of the core enterprise with purchaser is one representation for the core enterprise to participate in the sale, because the core enterprise should perfect the production and design of the produce according to consumers' demands, even ask the dealer to complete its design, so the new cooperation except for the united sale forms between the core enterprise and the dealer.

### 3.2.3 United pricing

Shopkeepers' retail pricing will directly influence the profit level of the core enterprise. Because the manufacturer hardly control shopkeeper's pricing, if the pricing of the core enterprise is lower than the shopkeeper's anticipated profit, and even the retail pricing can make the core enterprise and the shopkeeper acquire maximum channel profit, shopkeeper also will select the pricing from his own maximum profit. However, because they can not acquire maximal integrated profit in the state of non-cooperation and can not make their respective profits maximum, so for the pricing, the core enterprise and the shopkeeper have the cooperative game base, and the objective of the cooperation is to reduce the transaction cost of haggling by united pricing and realize the integration of sales pricing.

### 3.3 Cooperative cost management with homogenous enterprises

The homogenous enterprises mean the enterprises with same benefit objective in the same industry. Generally, the enterprise will consider the cooperation in certain value phase with homogenous enterprises according to the associated and sharing thoughts in the value chain theory. In the cooperation, the enterprise will relegate the part without obvious advantage to homogenous enterprises to compete it, for example, the design of certain components, the R&D of certain technology and sharing the sales channel with homogenous enterprises.

The cooperation among homogenous enterprises root in different core competitions of different enterprises, and the cooperative enterprises respectively possess strong strength in certain aspect, so they have different value increase points. For the maximization of respective benefits, these enterprises will consider many factors such as operation association and operation importance to contract non-core works to other enterprises, i.e. the homogenous cooperation in the value system should seek the benefit crossing in the interest conflict to realize win-win cooperation, maximize bother benefits in the value system and effectively control the cost. In the benefit maximization, the enterprises try to solve the interest conflict and achieve the win-win effect by the game behavior with homogenous enterprises, and accordingly reduce the management cost and the transaction cost in the cooperation.

## 4. Cooperative harmony and risk cost

The complete value chain of the company is a series of combinations of all correlative activities of different enterprises including customers and suppliers in the supply chain extending across organizational boundaries. The relationship governance among companies in the value chain is mainly to harmonize, manage and control the mutually dependent activities (including the activities harmonizing and influencing the boundaries of the company) between two neighboring node enterprises and the mutual capital transmission. The interior harmonizing mechanism of the company can take the administrative order as the primary measure, but the node enterprises in the value chain are independent each other, and the authority mechanism is deficient to harmonize the relationships among them. Gulati and Singh (1998) thought that the encouragement mechanism, the standard operation program, the dispute solution, the non-market pricing system, and other proper measures can be the control mechanisms to manage the relationships among companies in the value chain. In addition, Thompson (1967) thought that the mutual dependence and uncertainty about the activities in the node enterprises were stronger, and they more need to harmonize and manage these relationships. Therefore, to harmonize the relationships among node enterprise in the value chain, the mutually dependent activities and the capital transformations among companies should be first harmonized and managed, and the management measures are related with the cooperative relationships (such as merger relationship, series relationship and reciprocal relationship) among node enterprises in the value chain and the uncertainty of the activities engaged by these companies.

Because the enterprises in the value chain are independent each other, the cooperation is mainly to form the contract by

the negotiation. The contract is the agreement achieved by people who actualize the cooperation and benefit distribution. To sign a contract must pay corresponding cost, and because of the diversity of the contract form, to achieve different contract will consume different transaction costs and induce different cooperative effects. But in the game process, there are still some decisive risk factors which will raise the cost for the enterprise.

First, for both sides in the cooperation, (1) the enterprises participating in the cooperation generally possess certain strength and certain stability for the development strategy, but they can not eliminate the costs induced by the adjustment and adaptation for the cooperation when the management strategy changes largely, (2) though the cooperation emphasizes sharing information, but the cooperation members can not realize complete information sharing in the cooperation because of their respective benefits, and the cooperator can not know the other's information sufficiently, and the phenomenon of information asymmetry will occur, and the cooperators will continually select their partners in the cooperation process, so the additive cooperation selection cost will occur, (3) in the implementation process of the cooperation, cooperators may adopt the opportunism behaviors, and the "moral risk" may occur, so the enterprise certainly adopt corresponding measures to keep away, and the cost to prevent the risk occurs, (4) in the game process of the cooperation, because both sides are inclined to keep their private information, poke others' information and prevent information loss, the information technology and the safety risk about the information emerge as times require, so the cost of information safety will occur.

Second, as viewed from the exterior economic environment, (1) in the value system, the disagreement of benefits will certainly induce the competition which may be from cooperators or exterior, and the any competition will bring certain uncertainty and competitive cost for the management and cooperation of the enterprise, (2) in the cooperation, the enterprise inevitably needs the information transmission among enterprises, because the "information channel" is easily influenced by the exterior jamming factors, and the "information distortion" will bring risk loss for the cooperative enterprises, (3) in the business cooperation across regions and countries, the differences in the customs and cultural backgrounds will bring risk costs for the cooperation.

Though enterprises all hope to reduce the transaction cost by the cooperation, but in the cooperative game process, the costs still may happen. The generation of these costs is induced by a series of uncertain factors including the uncertainty of the decision of the core enterprise, the uncertainty of the exterior cooperative enterprise brought by the uncertainty of the core enterprise's decision, the uncertainty of the exterior cooperative enterprise's subjective behaviors and the uncertainty of the management environment, and these uncertainties bring prevention costs and risk costs for the cooperation among enterprise and directly influence the efficiency of the cooperation.

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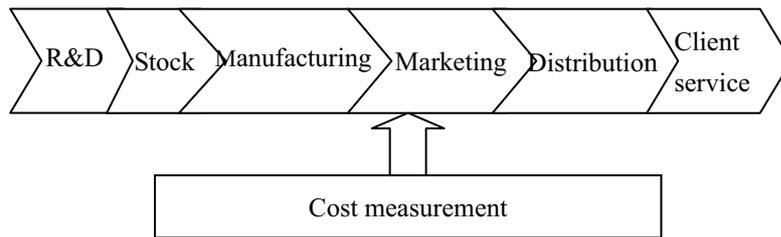


Figure 1. Structure of Cost Chain

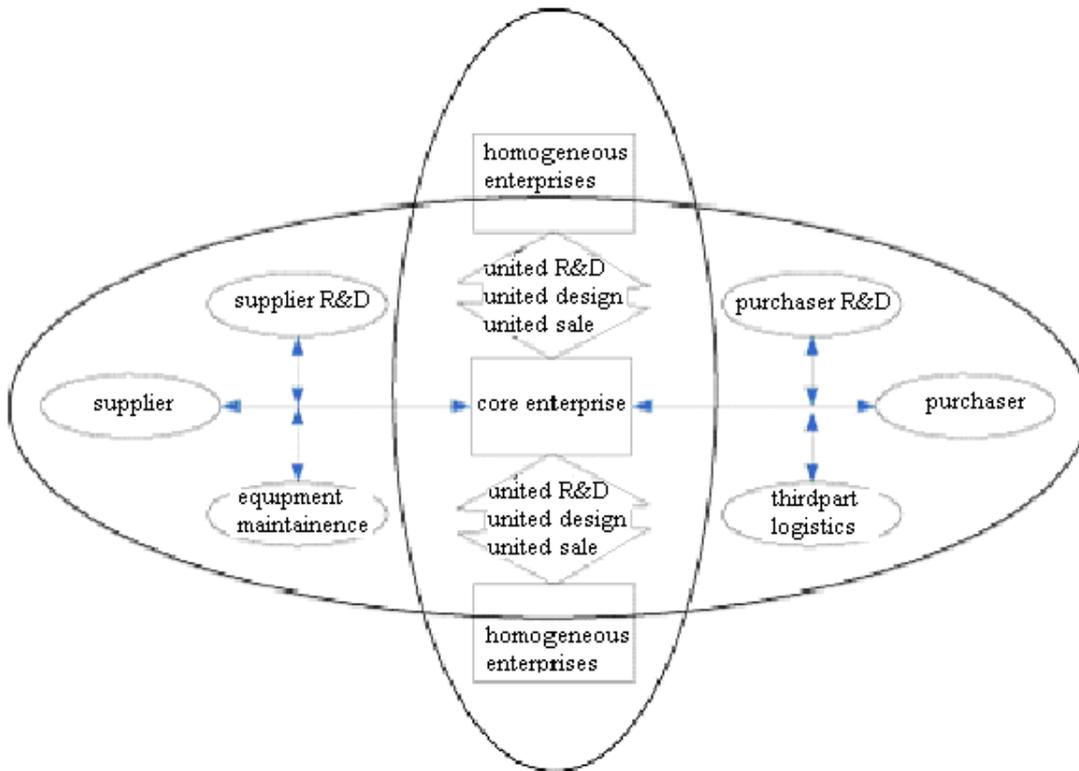


Figure 2. Structure of Value System (Zhang, 2006, P.24)