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Research into Strategies of Risks in Supply Chain

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Abstract: Supply chain risk management is one important content in enterprises management. The cooperation between enterprises in the supply chain may be put under risk due to changes of various factors. This paper analyzes the formation of endogenous risk and exogenous risk of supply chain risk and puts forward the the strategies of solving supply chain risk .

Keywords: E-commerce;marketing;supply chain risk;strategy

1. INTRODUCTION

E-commerce is a new way of enterprise management, is considered to be the second revolution of Internet. Along with the arrival of the supply chain environment, the competition between the enterprises strength and breadth are greatly increased, forcing enterprises to carry out strategic management, the enterprise focus on their main business, forms the enterprise core competitive ability, the non-core business outsourcing, to increase the enterprise flexibility, reduce operating costs, reduce risk. Cooperation between supply chain enterprises, because of asymmetric information, information distortion, market uncertainty and the change of other factors such as political, economic, legal, and cause the existence of various risks. In order to make the enterprise in the supply chain can gain satisfactory results from cooperation, must take some measures to avoid risks in operation of the supply chain, such as increasing transparency and sharing information, optimize the mode of contract, set up supervision and control mechanism, etc., especially must at all stages of business cooperation through the operation of the incentive mechanism, used in a variety of means to implement incentive, in order to make the cooperation between supply chain enterprises more effective.

2. THE PAPER ANALYZES THE CAUSES OF SUPPLY CHAIN RISK

2.1 Supply chain consists of suppliers, manufacturers, distributors, retailers, customers and service providers of the reticular structure. Each link in the chain is not intersected each other, but linked a organic whole. Supply chain management to logistics, information flow, cash flow, business flow and value stream management throughout the whole process of supply chain.

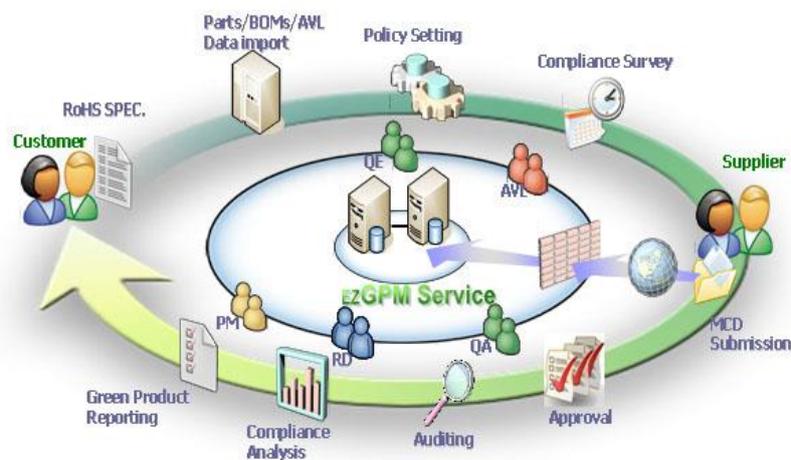


Figure 1. Green supply chain management

It covers the entire logistics, from raw materials and spare parts purchasing and supply, product manufacturing, transportation and warehousing to sales of various functional areas. It requires that each node to realize information sharing between enterprises coexist, risk-sharing, interests, and from a strategic height to recognize the importance and necessity of supply chain management, so as to achieve the effective management of the whole. As shown in figure 1.

2.2 The domestic and foreign scholars have a lot of people to the risk of the supply chain environment are studied, including the risk category, causes and characteristics, etc. Sum up, the risks of enterprises in the supply chain can be divided into Indigenous Risk and Exogenous Risk two categories, as shown in figure 2.

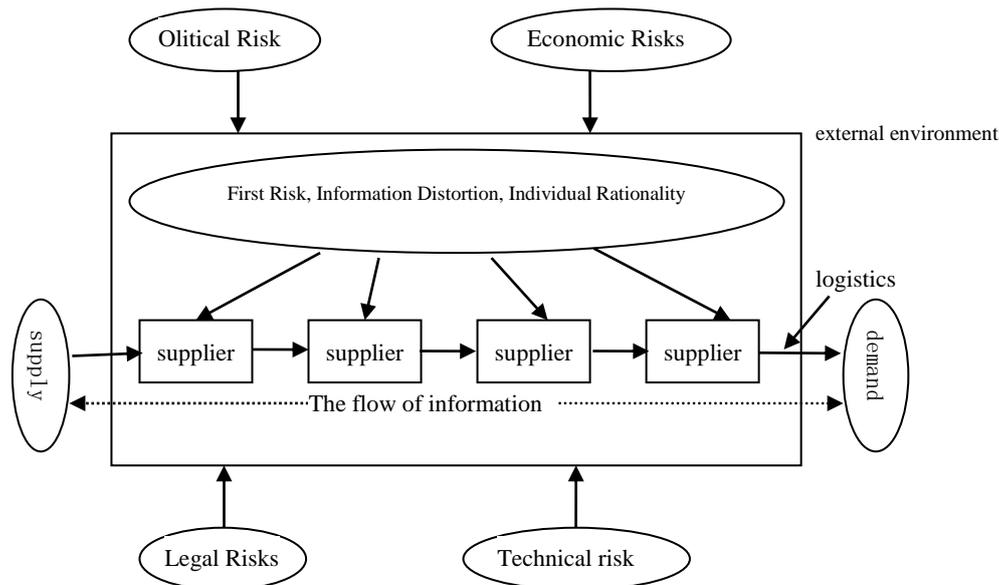


Figure 2 . Classification of supply chain risk

2.3 Supply Chain Risk Elements

2.3.1 Opportunism risk. Due to the asymmetry of information, one party from the other party of supply chain contracts get the rest of the gains, break the contract, the supply chain of the crisis. Throughout the supply chain management environment, the client in a worse position than agent, agent enterprises often by increasing the asymmetry of information, get the biggest benefit from designated partners.

2.3.2 Information communication obstacles. Because each enterprise is independent operation and management of economic entities, supply chain alliance is essentially a loose, when increasing the scale of the supply chain, the increasingly heavy and complicated structure, supply chain information error opportunity has said. Information transmission delay will lead to inadequate communication between upstream and downstream enterprises, production and customer demand for products in over a disagreement about understanding, not really meet the needs of the market. Also produces the bullwhip effect, which leads to the excess inventory.

2.3.3 Enterprise operation risk. Modern enterprise production organization emphasizes the integration, efficiency, and that could lead to the production process is too rigid, lack of flexibility, if in the production or procurement of a certain link problems, it is easy to lead to the entire production process to a halt.

2.3.4 Risk of channel members. Distributor is direct face of the market, to fully implement effective supply chain management, the choice of distributors work must be done. Improper selection in supply chain, if distributors will directly lead to the failure of the core enterprise market competition, can also lead to the supply chain of cohesion, which can lead to the disintegration of the supply chain.

2.3.5 Logistics operation risk. Logistics activity is the link of supply chain management, which requires among supply chain members to joint program, realizes the information sharing and unified management of inventory. But it is hard to do this in the actual operation, resulting in raw material supply, transportation, cache and cache of raw materials, product production, products sales, such as cohesive errors may arise during the process, these cohesive errors could lead to a supply chain logistics are not clear and produce risk.

2.4 The external environment of supply chain risk Identify risks against

2.4.1 Market demand. The performance of a supply chain is based on market demand as the guidance, in the supply chain such as production, transport, supply and sales are based on accurate prediction on demand. Market competition intensifies, greatly enhance the uncertainty of consumer demand preferences, difficulties to make accurate prediction, it is easy to increase the risk of the entire supply chain management. If you can't get the right market information, supply chain can not reflect the changing market trends and customer preferences. A supply chain will be unable to change according to the requirements of the new products and supply, and not to enter a new market segment. Finally, the market opportunity will be unable to meet the needs of customers and quick delivery.

2.4.2 Economic fluctuation risk. Orbit has obvious cyclical of market economy, prosperity and decline appear alternately, the macroeconomic cyclical change, make more risks in supply chain management. During the boom years, supply chain under the stimulus of growing market demand, increase the investment in fixed assets, to expand production, increase inventory, additional human, accordingly increase the cash outflow. In a recession, supply chain, the drop in sales cash inflows, and not completed investment in fixed assets is still needs a lot of money to continue. The market financing environment is not ideal, financing cost increase. This kind of situation is of poor liquidity increases the risk of supply chain management.

2.4.3 Economic policy risk. When national economic policy changes, often to fund-raising, investment and other supply chain management activities an enormous influence, increase the management risk of the supply chain. For example, when the industrial structure adjustment, the state tend to stage a series of industrial structure adjustment policies and measures, to encourage some of the industry, pointed out the direction of the investment to supply chain; Restrictions on other industries, the supply chain of the original investment is facing the risk of loss, supply chain need to raise a lot of money for industrial adjustment.

2.4.4 Legal environment risk. In the interests of the state law on behalf of the state restricts the people's behavior. The change of the legal environment of supply chain members face will induce supply chain risk management. The law of each country, there is a process of gradually perfect, the adjustment of the laws and regulations, revision and so on uncertainty, may have a negative effect on the supply chain operation.

2.5 Supply chain members attitude to risk

In the fierce market competition environment change, there are a lot of uncertainty. As long as there are uncertainties, there is a certain risk, uncertainty and risk are always linked together. If the partner selection improper, will lead to moral hazard in supply chain operation. Appropriateness is formed between the principal-agent contract is uncertain; As a result of their cooperation mutual bargaining, negotiation is uncertain; Supplier's delivery status has the uncertainty and changing market demand have uncertainty.

2.5.1 Supply chain management is the key to the integration of thought and method. It is a start from suppliers, manufacturers, distributors, retailers, until eventually the customer's total factor, the whole process of integrated management model, is a kind of new management strategy, it integrate the different enterprises in order to increase the efficiency of the whole supply chain, pay attention to the cooperation between enterprises, in order to achieve the global optimal.

2.5.2 Between the enterprise and its upstream and downstream enterprise supply chain management in different market environment to achieve the transfer of the inventory, reduce the inventory cost of the enterprise. The requirements of each enterprise in the supply chain members to establish strategic cooperative relations, through the rapid response to reduce total inventory cost.

2.5.3 Regardless of the form of the supply chain node enterprise quantity, regardless of the type of node enterprises of supply chain, and also how many, the formation of the supply chain is based on the customer and consumer demand as the guidance in the end. It is because of the needs of customers and final consumers, is the existence of the supply chain. And, also only allow customers and final consumers' needs are met, can have a greater development of the supply chain.

2.5.4 In the principal-agent relationship, between enterprise risk appetite may be asymmetric. Because of the principal shall some business outsourcing, risk is spread, but the degree of risk and the corresponding agent increased, so in this case the optimal contract. However, agent of the relationship between the degree of risk aversion and the income difference directly affects the size of the agency cost, thus affect the operation of the principal-agent relationship. So you have to study enterprise's attitude to risk, so as to ensure the normal continuity for cooperation. As shown in figure 3.

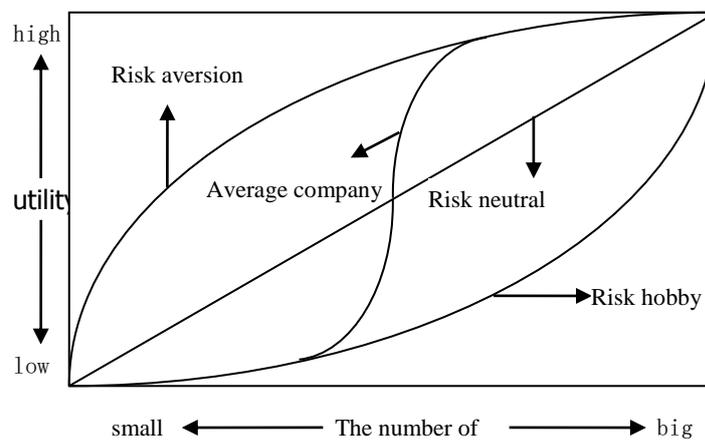


Figure 3. The utility function of different risk attitude

2.5.4.1 Risk - Love enterprises

For the supply chain, it regardless of the possible danger, still implement a behavior and a decision-making activities. Its utility function is convex type, expected utility must be less than the expected utility of probability event. Risk appetite for random earnings is bigger than access to determine the risk returns, and opportunity is small. These companies tend to venture capital, following the greater the risk the greater the earnings management principles, its advantageous one side is easy to seize market opportunities, to risk to obtain the first bucket of gold, its malpractice is encountered risk likely to crop failures, even collapse.

2.5.4.2 Risk - Averse enterprises

This kind of enterprise is relatively conservative, to avoid the possibility of risk. The utility function is concave type, expected utility must greater than the expected utility of probability event. Risk averse firms prefer to make sure profit rather than for random gains or income uncertainty, i.e. as far as possible to avoid risk. This type of enterprise easy to miss the good potential business opportunities, for fear of the investment decision-making errors and dare not rashly into the high return on investment industry, develop relatively slowly.

2.5.4.3 Risk Neutral enterprises

The enterprise neither adventure or conservative, but between love and risk aversion of risk. We can see that the result of probability event and the probability of the event itself. Such companies belong to cerebral investment preference type, select on the premise of careful analysis of market opportunity, dare to seize business opportunities without precipitate action, to seek safe and not stuck in the past.

3. THE SUPPLY CHAIN RISK PREVENTION COUNTERMEASURES

3.1 Due to the supply chain from product development, production and circulation process is composed of multiple node enterprise participation, thus risk factors among all the enterprises can through the supply chain process in transfer and accumulation, and significantly influence the overall level of the supply chain risk. Therefore, the transmission and control of supply chain risk is one of the key supply chain risk management. According to the time sequence of the supply chain and operation process, each node work formed a serial or parallel hybrid network structure. One job can completed by an enterprise may also be completed jointly by multiple enterprises. The overall efficiency of the supply chain, cost, quality index depends on node index. Because each node are at risk, the overall risk from supply chain risk transfer. Through risk transfer algorithm can identify bottleneck of supply chain risk unit, on the basis of risk adjustment and optimization, and control the risk. Such as the allocation of resources of the bottleneck node may be adjusted.

3.2 Enterprise risk may through the following methods to management:

3.2.1 Risk transfer: using the insured pay premiums will risk shifting to the insurance company; Can also through some non-core business outsourcing to other companies.

3.2.2 Risk retention: the use of some enterprise internal resources for loss plan, oneself bear part or all of the loss.

3.2.3 Loss financing: the use of financial derivatives to hedge risk, such as hedge as interest rates, prices, exchange rate changes.

3.2.4 Risk control: by strengthening the enterprise internal management to avoid, reduce the management risk.

3.3 Due to the supply chain is composed of multiple partners in the chain of enterprise, enterprise risk management tools above do not apply. Supply chain risk management core is the management of the supply chain partnership and cooperation relations, supervision and control. Practice has proved that supply chain management at home and abroad can enhance the understanding and guard against risks in the operation of supply chain, is related to whether it can achieve the desired effect.

3.4 Strengthen the node enterprise risk management. Supply chain from procurement, production and sales process is composed of multiple node enterprise participation and the formation of a serial or parallel hybrid network structure. One job is likely to be completed by an enterprise, may also be completed jointly by multiple enterprises. The overall efficiency of the supply chain, cost, quality index depends on node index. Due to the overall risk of supply chain is composed of each node risk transfer. Therefore, through to the node enterprise risk identification and judgment of risk adjustment and optimization, will greatly enhance the entire supply chain risk control. As shown in figure 4.

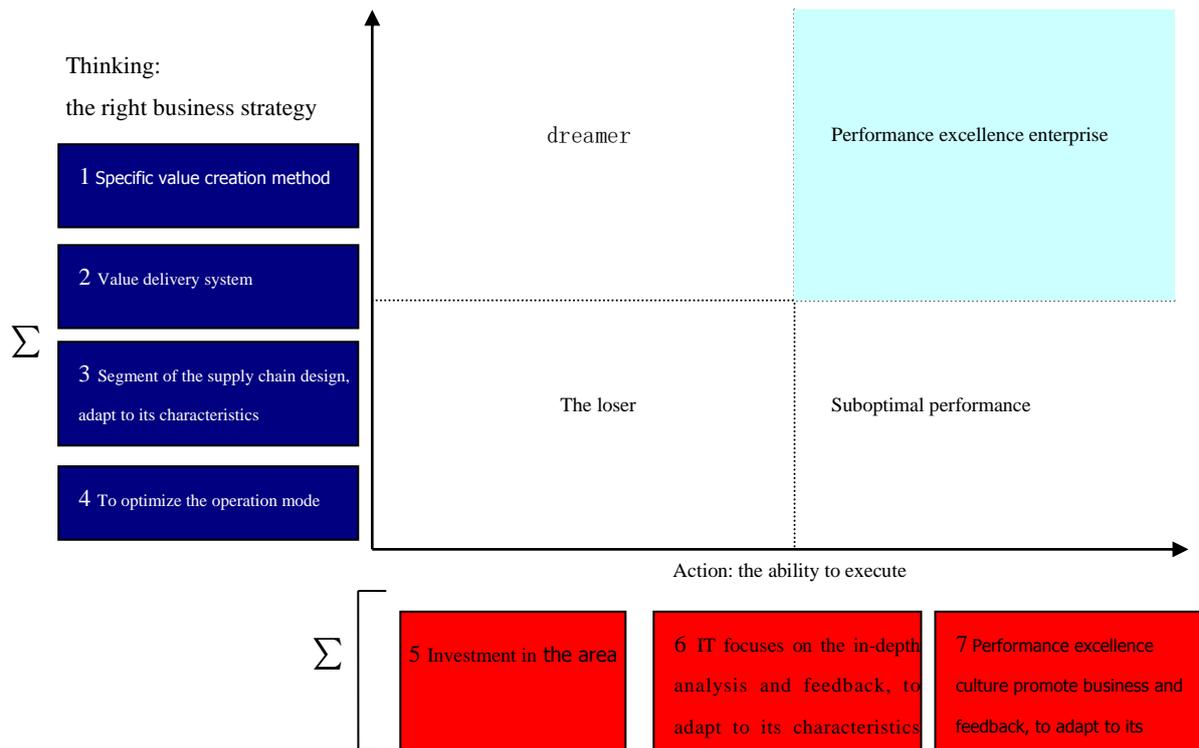


Figure 4. Supply chain risk control

3.5 To establish the emergency response mechanism. Supply chain management, be prepared for emergency happened. For some emergent destructive events, however, can be set in advance the strain measures, formulate the working process of the respond to emergencies, establish strain event group. At the same time, we should establish a set of evaluation index system of early warning, when more than one index deviation from normal levels and more than a "threshold", a warning signals, handled in a timely manner.

3.6 To strengthen information exchange and sharing, improve the efficiency of information communication. Between supply chain enterprise should through the establishment of a variety of channels of information transmission, strengthen information exchange and communication, increase the transparency of the supply chain, the increasing degree of information sharing to eliminate information distortion, such as Shared about the expected demand, orders, production planning, such as information, thus reducing uncertainty and reduce risk.

3.7 To optimize partner selection, forms the value of the alliance. Supply chain partner selection is an important part of supply chain risk management. On the one hand, to make full use of their complementary to play competitive advantage of cooperation, on the one hand, also want to consider the cooperation of partners cost and adaptability. Partners shall supply chain as a whole, rather than by purchasing, production, sales, separation of function module in the composition of each link. Only chain partners insist on and eventually implementation of supply chain strategy, supply chain can truly take advantage of cost, occupy a larger share of the market, to maximize the value of supply chain, realize the member of win-win.

4. SUPPLY CHAIN IMPROVEMENT STRATEGY

Supply chain is a network structure, once a local problem, it is immediately spread throughout the global, so in the process of the operation of supply chain management requires that each member of the enterprise market information collection and feedback to timely, accurate, to achieve quick reaction, reduce the loss. And

to do this, supply chain management and advanced information system and powerful information technology as the support. As shown in figure 5.

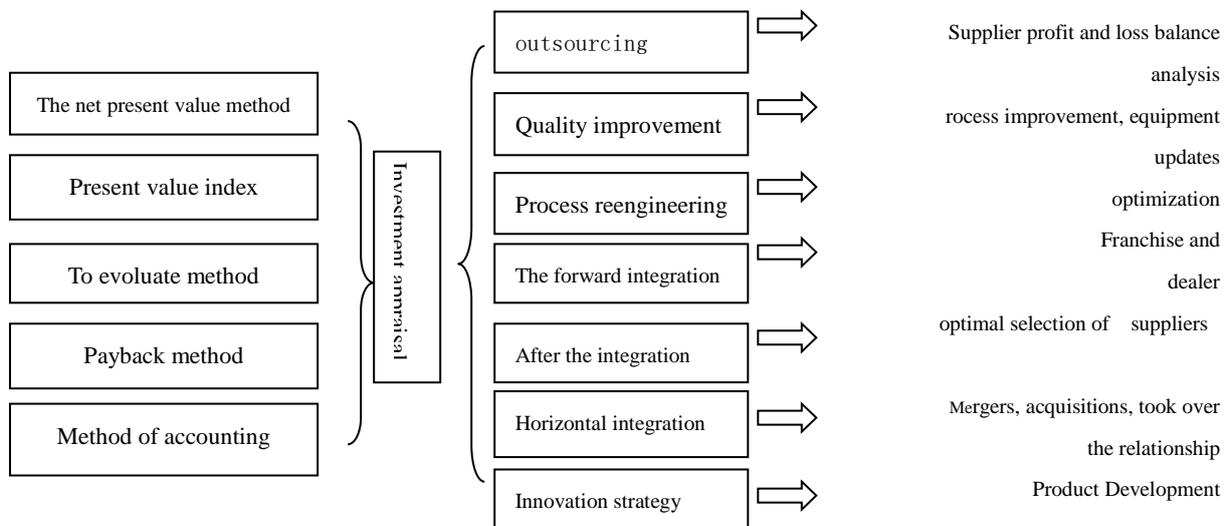


Figure 5. Supply chain improvement strategies

4.1 Different industries, different products require the use of different strategies of supply chain management, supply chain management's primary goal is to build with their own industry and product features for supply chain type.

4.2 Supply chain management is the collaborative management of the business, on the supply chain coordination is the core of the thought of supply chain, is the ultimate goal of supply chain management, supply chain collaboration performance of supply chain organization members cooperate with one another to complete some work, value creation and even members of the supply chain together to achieve common strategic vision.

4.3 Supply chain management with order together as the core, realize the orders for quick response. One goal of supply chain management is to realize the lowest cost of supply chain, in order to enhance competition ability of the supply chain each enterprise, creating largest value for assignment to the end customers.

4.4 Supply chain management of supply chain channel organizations, the channel management. Focus on the channels of centering on the core enterprise of business process optimization. Supply chain is supply chain related to the deal directly with the content of the enterprise information resources, information resources depends on the processing of the application of information technology.

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