

## Original Paper

# Enterprise's Strategies to Deal with Epidemic Crisis Based on Super-Dynamic Capability Theory

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### Abstract

*In this paper, the supply chain management risks arising from 2019-novel coronavirus (hereinafter referred to as "COVID-19") outbreak was proposed, and they were further analyzed from three main aspects such as change in demand conditions of domestic customers, change in domestic supply market, impact on domestic logistics industry. Besides, multiple feasible strategies for coping with such epidemic situation were proposed for enterprises based on the super-dynamic capability theory. The research in this paper has powerful theoretical value and practical significance for the current development of enterprises, especially the reorganization of enterprises under the current epidemic crisis in China.*

### Keywords

*epidemic crisis, super-dynamic capability, supply chain management*

## 1. Introduction

As December 2019 when the COVID-19 broke out in China, we observed a phenomenon from the point of view of enterprise supply chain risk management: the sudden outbreak of such disease resulted in too much uncertainties and which caused significant impact on the regular operation of many offline entity enterprises after Chinese's Spring Festival. Manufacturing-type enterprises cannot recover from the epidemic crisis, and most foreign-trading-type enterprises cannot delivery on schedule. With the lapse of time, the epidemic situation of COVID-19 is gradually emerging its increasing impact on China's economy, especially the real economy.

In order to contain the epidemic situation from diffusion during the period of "returning to work", more and more enterprises had delayed their originally after-festival commencement time for responding the

national call, and even launched the online remote office in a certain time. However, those enterprises requiring to transact face to face and those micro or small-sized enterprises without risk management ability are facing with a difficulty, *i.e.*: how to recover and continue regular business operation? Fortunately, WHO did not identify China as the epidemic country in its meeting of Emergency Committee held on January 23, 2020. However, WHO will re-judge according to the progress of such epidemic situation in China and the result will play important role in the global economy and supply chain; in other words, such impact may even spread the market all over the world from China's market. Here is a question: what is the reason that makes the enterprises those were prosperous in the past trap in business difficulties when the epidemic crisis happens? From the perspectives as mentioned in this paper, one of the reasons making all these enterprises devitalize is the lack of dynamic capability. In view of the supply chain risk management, certain persons may become losers and certain persons may become winners as a crisis happens. Is it a real risk or opportunity? The key to the question is the one how the enterprise starts and does. Therefore, a sound and well-organized crisis management is an indispensable factor that an enterprise could get success, and is also the important core competitiveness of an enterprise. In other words, the comprehensive and systematic crisis management cannot only help enterprises to avoid crisis, but also help enterprises to master opportunities and re-build their core competitiveness. If deeming the epidemic situation as the disaster that has already happened, the professional supply chain management staff should start the risk emergency management and the disaster recovery plan. Therefore, in such context, what it is urgent to establish in an enterprise is the super-dynamic capability to adapt to the changing economic situation.

The study on enterprise's dynamic capability has aroused the extensive attention of enterprises' strategic management scholars in China and overseas, but so far, the application of dynamic capability is still facing with many limitations. In the context of China's epidemic crisis, how to develop enterprises' dynamic capability? How does an enterprise make the supply chain risk management? In this paper, we propose the supply chain risk management countermeasures based on super-dynamic capability theory to further enrich the study on enterprises' dynamic capability.

## **2. Risks in Supply Chain Management of Enterprises**

Supply chain risk lies in multiple processes, including packaging, transportation, storage, distribution processing and information control, etc. If one of the processes goes wrong, it will lead to the risks in supply chain and affect its normal operation. All processes in a supply chain are correlated, demonstrating a more complicated networked tendency. Nowadays, most of enterprises survive in the supply chain, requiring all concerned parties inside to cooperate with each other. Therefore, in case of crisis, it will disrupt the supply chain and even cause serious damage to it. In view of the impact of current epidemic situation on the supply chain, it is easy to find that supply chain risks caused by COVID-19 covers three main aspects.

### *2.1 Change in Demand Conditions of Domestic Customers*

In the context of the epidemic situation, Chinese Spring Festival holiday 2020 had to be postponed in succession, which will inevitably delay downstream customers to return to work. As a result, their original production and distribution plan had to be broken. Even if enterprises can restore their production after the festival, the risk whether the rate of capacity utilization may decrease sharply due to the shortage of labor force, resulting in the significant reduction of demands in a short time is still worthy of considerations. Besides, the time of the enterprises in Hubei Province, especially in Wuhan city equipped with relatively dense manufacturing industries, for restoring production after the festival is still difficult to forecast. Furthermore, the sudden change caused by the epidemic situation to the demand and the structure is obvious, including the categories and specifications. For example, the consumption on household packaged foods and water are soaring, consequently, the supply chain plan fell into disarray. All problems aforesaid may possibly lead to the huger change in the demands of domestic customers and thereby cause supply chain risks.

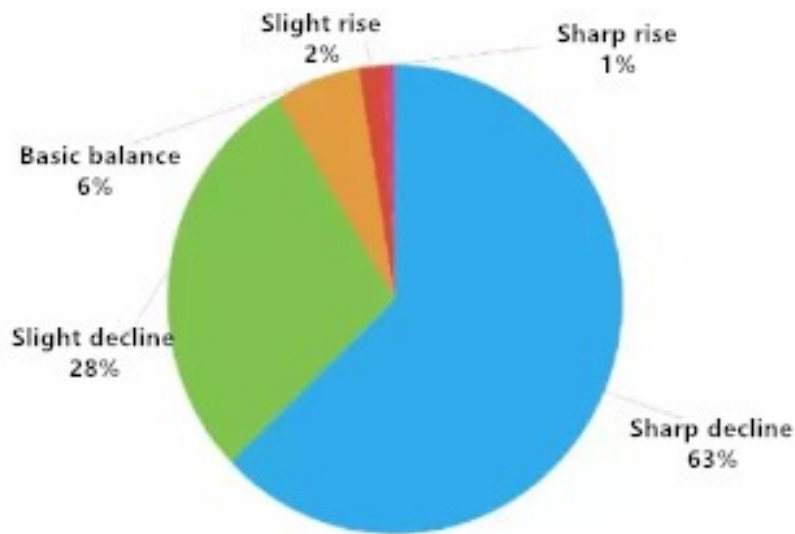
### *2.2 Change in Domestic Supply Market*

The conditions of domestic supply market in China is likely to suffer with a large change in a short time, which can be embodied by the two aspects as follows: (1) Most of industries may suffer with the decrease of supply level due to the reduction in their production capacity. The upstream suppliers are also disrupted by the delayed holidays and difficulty in worker employment, which may result in the failure to normally release their production capacity after the festival and further cause an imbalance in the supply market. (2) As for certain specific markets, such as non-woven cloth, melt-blown cloth and other supply markets highly correlated with the epidemic situation, the supply and the demand will also suffer with a serious imbalance. In fact, as mentioned by the minister of the Ministry of Industry and Information Technology of the People's Republic of China, the maximum production capacity of China for respirators is around 20 million pieces per day. In comparison with the huge demands, the current production capacity is solely a gap in the quantity. However, in addition to the national regulations, namely respirators as finished goods must be stored for 14 days, the gap between the demand and the supply will become even more serious.

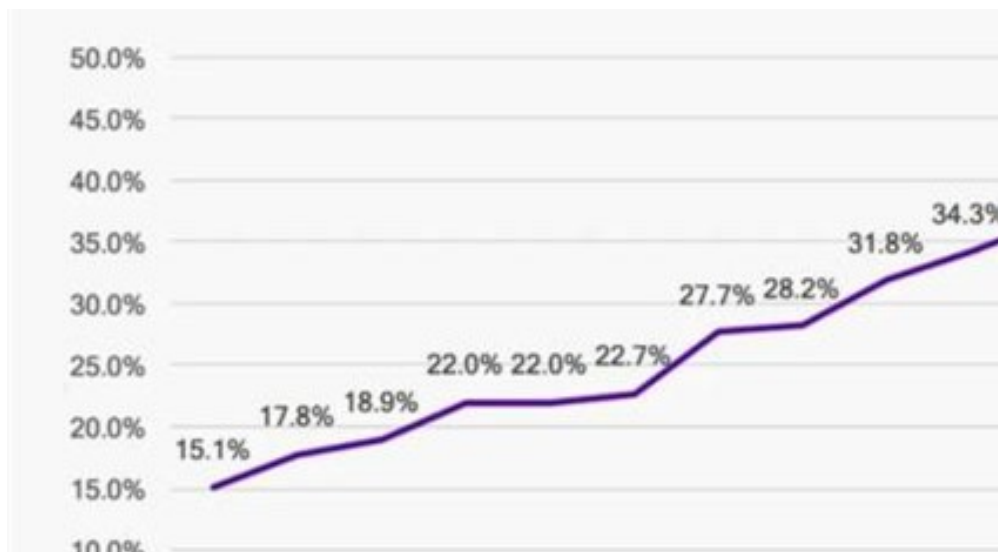
### *2.3 Impact on Domestic Logistics Industry*

Due to the limitations of epidemic control policy, workers cannot return to work while logistics lines are blocked. Therefore, enterprises' production capacity cannot be fully released to cope with the changing demand. On the one hand, the risks of getting virus infection during this period may increase. Corresponding measures such as making people isolation and limiting people movements make the number of people who are eager to return to work difficult to ascertain, and which may have a negative impact on working time and working efficiency. On the other hand, in order to block viral transmission, the measures like establishing local disinfection station and utilizing epidemic prevention equipment may slow down production rhythm, reduce logistical efficiency, increase on-the-way time, and improve transportation cost. What's the worse, the logistics cost will further increase since the problems such as

logistics interruption may result in delivery delay. Therefore, the current logistics system in China will inevitably be affected to some extent.



**Figure 1. Business Volume of Logistics Companies Compared with the same Period of Last Year under the Epidemic**



**Figure 2. National Vehicle and LTL Freight Traffic Resumes Trend**

### 3. Strategies of Enterprises for Coping with Epidemic Crisis

Supply chain risk management is a systematic process controlling the risks caused by the accident or change occurred in the supply chain. Accordingly, facing the epidemic crisis, super-dynamic capability theory has profound practical significance for risk management strategy of enterprises in China. Dynamic capabilities can be defined as a firm's ability to integrate, build and reconfigure internal and

external capabilities to address rapidly changing environments (Teece *et al.*, 1997).

Eisenhardt and Martin argued that dynamic capabilities are a set of specific and identifiable processes such as product development, strategic decision making, and alliancing (Eisenhardt *et al.*, 2000). Defining ordinary or “zero-level” capabilities as those that permit a firm to “make a living” in the short term, one can define dynamic capabilities as those that operate to extend, modify or create ordinary capabilities (Winter, 2003). The micro foundations of dynamic capabilities undergird enterprise-level sensing, seizing, and reconfiguring capacities, including the distinct skills, processes, procedures, organizational structures, decision rules, and disciplines (Teece, 2007). Furthermore, the super-dynamic capability is a live ability built by enterprise for coping with the rapid change in external environment, particularly, its main characteristic is the initiative. The previously defined dynamic capability is for realizing a function or task of a system. Instead of realizing own objective, it is a kind of passive dynamics. However, super-dynamic capability focuses on its own objective. In the process of communication and interaction with the environment, it can fit the purpose and direction with changing own behavioral form and structure for adapting to environmental requirements. Also, it emphasizes on collaboration and competition with other entities to strive for maximum survival opportunity or interests. Since December 2019, the outbreak of COVID-19 upset supply chain plans of many enterprises. In such a horrible crisis, there are many factors affecting the survival of enterprises, but the one of adopting risk management strategy based on super-dynamic capability is of great importance from the perspective of enterprise itself.

### 3.1 Multiple Suppliers

The super-dynamic theory focuses on the building of super-dynamic capability, which is a continuous evolving and developing digestion system. In this evolution process, the principal performance parameters are changeable and the functions and structures of the entire system may also change correspondingly. Aimed at strategic alliances or acquiring price discount, enterprises may usually purchase the primary raw materials from a single supplier. In view of influences caused by the current epidemic situation, the failure of one supplier to supply the purchased raw material may adversely result in the breakage of the entire supply chain structure and affect the normal operation of downstream enterprises there from. In super-dynamic capability system, every organizational factor interacts with each other, regarded as the main dynamic force for system evolution and development. Therefore, in order to mitigate the influence of change in one organizational factor, namely the supplier, on the entire supply chain system, multiple supplier strategy can be adopted. The selected multiple suppliers can be in different regions, or even in several countries to prevent the suppliers in the same region from suffering with the risks resulted from the identical epidemic influence. The purpose thereof is the one that enterprise can purchase from other suppliers in case a supplier cannot supply goods normally, which could simultaneously reduce the overmuch dependency on a single supplier. Such a strategy can not only adapt to the influence of change in one attribute on the entire dynamic system, but also protect the relative independency between multilevel organizations in super-dynamic capability

system. However, it must be mentioned that too many suppliers of identical commodity might lead to the complicity of supply chain, thus increasing the hardship in coordination and management, finally result in the rise of supply chain management cost.

### *3.2 Implementation of Flexible Management*

In view of the actual condition of current epidemic crisis, some entity companies with huge influence are also involved in the operation crisis. There is little trouble in the process of strategic analysis, formulation, implementation and feedback in these enterprises. Meanwhile, the shortness of dynamic capability, especially the super-dynamic capability, is one of the main reasons that these enterprises become devitalized. In practice, managers solely understand the importance of core capability, but are not realize the rigidity and sluggishness possessed in the core capability, which may usually result in the lack of strain capacity and adaptability when facing with the changes in environment. Therefore, implementing flexible management is a feasible strategy of enterprises for coping with epidemic crisis. The flexibility of supply chain, namely the elasticity, refers to the ability of supply chain for adapting changes in market demands. Equipped with flexibility, the strategy may vary with changes in environment, organizational structure, production capacity and marketing capacity flexibility, etc. Nowadays, the uncertainty to market demand caused by the epidemic situation is increasing, which is the basic reason why this risk is forming. As long as flexible management is implemented and active adaptive mechanism is built, a timely response on market demand under sharp change can be made so as to prevent the risks caused by the unmatchable supply and demand. At the same time, the enterprises in a crisis should improve their principal adaptive capacity to adapt to the occurrence of crisis. Through establishing the quick response mechanism, they could enhance the capacity of supply chain for responding market change and strive for maximum survival opportunity or interests. Nevertheless, enterprise must pay attention to reducing the negative influence caused by flexible cost in the process of implementing flexibility.

### *3.3 Establishing Benign Circulation System*

The super-dynamic capacity of enterprise is a capacity focusing on making adjustment along with changes in external dynamic environment. It is helpful for getting rid of crisis by multiple strategies such as research and development, resource configuration and continuous study. If the strategy enterprises implemented to cope with the epidemic crisis produces new dynamic capability which is beneficial for the process development and has the guiding role in the next circulation, its system for coping with crisis based on super-dynamic capability may form benign circulation. For this consideration, if the upper reaches and the lower reaches of an enterprise in the supply chain could collaborate closely, it is possible to establish the system capable of making super-dynamic capability get coordinated operation. On the one hand, by cooperating with suppliers in the upper reaches, the conditions of supply market and suppliers can be comprehended. Then new dynamic coordination mechanism should be established on the hierarchies of organization, information connection channel, incentive measures and risk avoidance plan. This kind of dynamic mechanism can be worked out with

suppliers to jointly overcome influences of risky factors and share their respective risk responsibility. On the other hand, by communicating with downstream customers, enterprises could obtain new information about changes in the customer side and markets. Meanwhile, they should spare no effort to investigate work resumption conditions, adjust delivery plan of purchasing orders, focus on demand plan change, and then make enough guidance for coping with the crisis. In a way, the original objective of building supply chain is to fit to the changes in the market and the operation environment, utilizing various advantages to match new dynamic capability with dynamic environmental factors and establish a benign circulation system with all partners involved in the supply chain when an epidemic crisis happens.

#### *3.4 Establishing Cross-Function Management Group*

Enterprises in a crisis can make an integrated study on themselves by the analysis model of super-dynamic capability. Through preparing the analysis report of enterprise's super-dynamic capability, senior management can be provided with the reliable information to obtain the capability of segmenting various hierarchies. At this moment, there is a need to make every department in supply chain share information, start efficient communication. Thus, establishing a temporary cross-function management group is extremely necessary for them. The cross-function management group should be capable of making efficient connection and control on the core product flow, providing accurate data and cross-function perspective. Therefore, it could utilize the proved and effective elements to realize the interaction of various dimensions while stressing on the subjective dimension of super-dynamic system. Based on the subjectively initiative, the objective of this group is to establish a comprehensive field of vision complying with the actual operation conditions of present economy, link organically the microcosmic view of enterprises with the macroscopic view under the epidemic crisis, and then highlight the integrity, dynamics, hierarchy and purposiveness of establishing super-dynamic capability.

#### *3.5 Mastering the "Opportunity" in a Crisis*

In fact, the crisis is the one in which the risk and the opportunity are co-existing. As for the crisis, enterprise needs not only to pre-warn and prevent risks, but also grasp and master the opportunities there from. The enterprise entity having super-dynamic capability is adaptive and initiative, so it can strive for maximum survival opportunity or interest on purpose in the process of communicating and interacting with the environment. The match ability of the demand and the supply resulted from this epidemic crisis in China becomes unbalanced, where the fresh food industry is generating new opportunities. The closed environment designed for the epidemic will make more populations gather and their consumption types are transforming accordingly. As the number of consumers buying vegetables online is rapidly increasing, this tendency is providing enough opportunity space for all involved enterprises. Therefore, in term of enterprises, it is significant to recognize the correlation between danger and opportunity in the crisis management, change the mode of acquiring resources via active behaviors, and improve the core competitiveness based on avoiding crisis. For example, the fresh food e-commerce enterprises in present China should change their weak relations with the

production area into strong relations, form the in-depth binding with the business clients, and even make investment on them. If so, the “order-orientated” agriculture can further flatten production and distribution, instead of fluctuating in line with market conditions. To conclude, enterprises must correctly exert their adaptability and initiative whilst avoiding and relieving crisis, strive to construct super-dynamic capability and realize the rebuilding of competitive advantages.

#### 4. Conclusion

Overall review of the full text, the purpose of the author is to put forward a complete set of feasible strategies of enterprise risk management in China. In order to achieve this goal, the author firstly analyzes potential supply chain risk under epidemic situation, which is the major obstacle to normal operations of enterprises. Therefore, it is of great significance to evaluate the effect of the epidemic reasonably and give it timely feedback.

The author clarifies the concept and characteristics of dynamic capability itself, which is the basis of enterprise risk management. Combined with super-dynamic capability theory, this paper suggests several practical decision-making recommendations for the current development of enterprises to operate. For enterprises, although the negative influence of the epidemic on economic development might not be avoidable, the focus at this stage should be to establish the awareness of enterprise risk management, and this article is just a brick to draw jade, sketching out the blueprint of supply chain risk management. However, how to formulate a more suitable strategy to better accommodate supply chain risks for contemporary China will be the focus of future research and reality.

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