

Take JD as an Example to Discuss the Impact of Digital Intelligence on Supply Chain Risk Management

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Abstract: The complex and changeable global economic situation forces supply chain enterprises to strengthen risk management to deal with all kinds of emergencies. In the existing research, the impact of supply chain risk is still lack of in-depth exploration. From the perspective of intelligent transformation of enterprises, this paper takes JD as an example to analyze the problems existing in the risk management of the three supply chains of commodities, logistics, and finance, and then puts forward the corresponding solutions to the different problems in the three supply chains. This paper analyzes that the transformation of enterprise number intelligence can improve the efficiency of supply chain coordination and improve its risk management ability by establishing a shared information platform, but the imperfection of technology and the immaturity of technology application will also bring more unprecedented risks to enterprises.

Keywords: Risk management strategy, JD, digital intelligence transformation, information sharing

1. Introduction

In 2020, JD adjusted his position to be a "supply chain-based technology and service enterprise". JD hopes to build an unbounded supply chain and promote the development of a supply chain to digital intelligence. JD's supply chain is mainly divided into three parts: commodity supply chain, logistics supply chain, and financial supply chain. In the commodity supply chain, JD has two main modes: the collection and marketing mode (suppliers hand over the goods to JD for management) and the POP model (merchants directly stationed, similar to Taobao). In the logistics supply chain, JD self-built logistics system and third-party logistics [1]. The financial supply chain mainly includes four systems: risk control super brain system, ecological model system, JD mood system, and security emergency system [2]. The risk control supersystem is based on advanced data analysis and machine learning technology. the core functions include using big data and artificial intelligence to accurately analyze and evaluate potential risks, monitor all links of the financial supply chain in real time, and quickly capture and respond to events that may affect the security and stability of the supply chain. This real-time monitoring mechanism is very important to the rapid change and high complexity of the financial industry. The ecological model system of the financial supply chain aims to build an inclusive and collaborative ecosystem, so that financial practitioners, suppliers, consumers, and other parties can form an organic interaction. Through the establishment of a win-win cooperation mechanism, the ecological model system encourages financial institutions to establish close links

with each supply chain participant to promote the collaborative operation of the financial supply chain, the ecological model system pays attention to information sharing and transparency.

Through the establishment of an efficient information flow mechanism, all parties can better understand the market change and make better decisions. JD mood system is a set of unique systems constructed by JD in the financial supply chain, which aims to enhance user loyalty and trust through emotional resonance and the promotion of user experience. This system includes the analysis of multi-channel information such as user lines and social media. JD's mood system can deeply understand the emotional needs of users, pay attention to providing personalized financial services for each user, and enhance user satisfaction through customized experiences. In the financial supply chain, the security emergency system is a set of security measures established to deal with emergencies and risk events to maintain the information security in the financial supply chain, the security emergency system is committed to the establishment of a strong network security system and privacy protection mechanism. This helps to prevent information leakage and cyber attacks. At present, the global economic situation is complex and changeable, aggravating the market risk. Enterprises must deal with environmental uncertainty by using intelligent means to strengthen supply chain risk management. As one of the hot issues of supply chain management, risk management has been widely concerned by academic circles for a long time.

The research issues involve risk identification, risk prevention, risk control, and other dimensions, but little literature discusses the impact of intelligent transformation on supply chain risk management. In this paper, taking JD as an example, based on the study of intelligent opportunities, this paper analyzes the specific problems and practical challenges faced by JD's supply chain business, and further discusses JD's ideas and countermeasures to strengthen supply chain risk management.

2. Risk Management Strategy

In the current academic research, the definition of supply chain risk management has not yet formed a clear consensus, different scholars have their unique understanding of it. By synthesizing the existing research results, it can be seen that the core goal of supply chain risk management is to reduce the vulnerability of the entire supply chain to ensure its continuity and profitability. Rather than focusing solely on company-level risk management, supply chain risk management takes a more macro view, viewing the entire supply chain as a complex and interconnected system that enables a more comprehensive approach to identifying, assessing, monitoring, and addressing risks. As a multi-level and multi-link network structure, the supply chain is affected by globalization, technological change, market fluctuations, and other factors, so the risks it faces are more complex and diversified. As a whole, supply chain risk management is considered to be an integrated process, the goal is to reduce the vulnerability of the entire supply chain system through a systematic approach to ensure its continuity and profitability in the face of diversified risks [3].

2.1. Commodity Supply Chain

JD's business model enables it to procure goods mainly from upstream suppliers. As shown in Figure 1, JD's procurement cost has been too high compared with other e-commerce platforms in recent years, which is due to the game between JD and upstream suppliers, which affects the control of procurement cost.

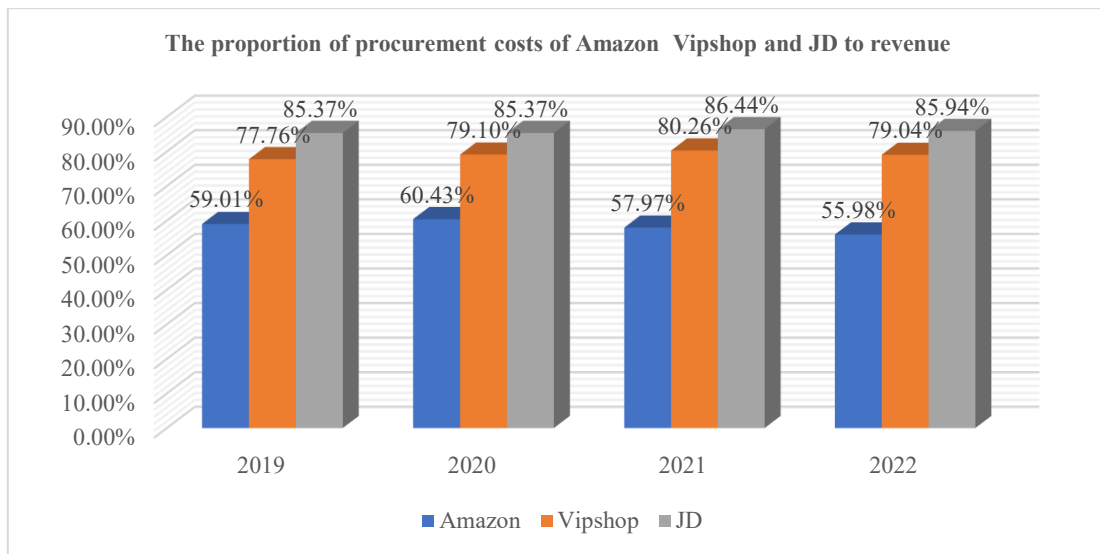


Figure 1: The proportion of procurement costs of Amazon Vipshop and JD to revenue.

To reduce the purchase cost, JD has the behavior of defaulting on the payment of suppliers. This kind of default behavior damages the interests of upstream suppliers, easily leads to the moral hazard of suppliers or directly leads to the departure of suppliers, and brings great risks to the stability of the whole supply chain [4]. However, the market demand information of customers cannot be fed back to upstream suppliers in time, so that they can adjust the price in time, which also greatly increases the risk of the supply chain. Although JD has achieved the goal of supply chain integration, if there is no good upstream and downstream connection, the results of its intelligent transformation cannot be well applied.

2.2. Logistics Supply Chain

The self-supporting mode of JD logistics does not rely on the help of the outside world, but it also leads to its high logistics cost. JD has been expanding the scale of its intelligent warehousing, its operation of a wide range of goods, and different products and different regions have different sales speeds, blind expansion is likely to lead to invalid warehouse area occupation, and poor inventory liquidity, resulting in out of control of warehousing costs, but also led to weak ability to realize assets, weakening its ability to deal with risks [5]. As shown in Figure 2, JD's warehousing costs are rising every year, which has undoubtedly put huge financial pressure on the supply chain.

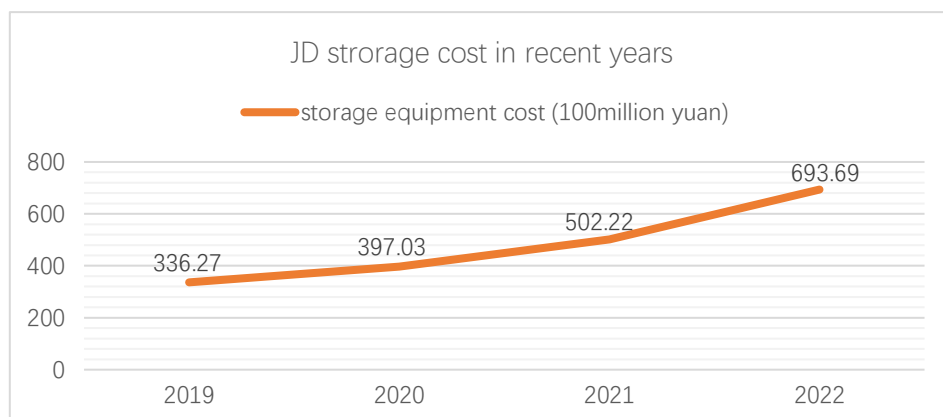


Figure 2: JD storage cost in recent years.

Secondly, consumers will affect the consumption decision because of the return policy, and reasonable return reverse logistics can increase the business turnover of enterprises and reduce the logistics cost [6]. JD's express appeal rate is high, and the return rate is also higher than the national level, which greatly increases the cost of reverse logistics [4].

2.3. Financial Supply Chain

JD's financial supply chain risk stop mechanism is not perfect, although it has established a relatively perfect big data risk control system and risk early warning device, due to the instability of the Internet and the inaccuracy of the model, there are still unpredictable risks. Secondly, JD can easily lead to the leakage of user information in the process of information collection, and the participants in the supply chain can obtain user information through the information-sharing platform [7]. In business operations, customers must provide their information to obtain financial support from JD. When JD collects and integrates information, there is a large number of user information leakage risks [2]. Once leaked, this will have a great negative impact on the reputation of the entire JD platform. Finally, the prediction ability of the JD big data application system is weak. The big data control system constructed by JD Finance only analyzes the relevant data of the current financing enterprises, but the future non-system risks such as cash flow and risk diffusion, as well as the system risks in the business process, cannot be dealt with.

3. Result and Suggestions

Information sharing can increase the total profit of the supply chain, and it is an important way to improve the benefit of the supply chain. JD Mall can further consolidate JD logistics and supplier association mode by opening up its information system to suppliers and sharing big data platforms. In this mode, the upper-class supplier can price the product independently, and the supplier can use JD's database to count and analyze the stay time, the number of searches, and the final sales quantity of the consumers on their product page, to predict the future sales trend and consumers' preferences, test the customer stickiness, and make more reasonable pricing on this basis. In this way, JD Mall takes a tough attitude on purchase prices under the mode of self-management, which affects the malpractice of good cooperative relationships with suppliers. For JD Mall, further consolidating the enterprise cooperation relationship and stable cooperation mode in the supply chain can greatly reduce JD's procurement cost, thus improving the efficiency and efficient operation of the supply chain. JD should strengthen cooperation with suppliers, control procurement costs, and make full use of big data analysis and the existing technical system to achieve a win-win situation.

JD should speed up the construction and popularization of automated warehousing, reduce the blind expansion of the logistics warehouse, and establish a performance evaluation mechanism between the material management department and the warehousing logistics management department. On the one hand, it can promote warehousing logistics managers to optimize the material reserve structure and enhance the adaptability to different material types and inventory scales. On the other hand, it can encourage warehouse managers to strengthen material management and inventory control and achieve inventory level optimization [8]. After introducing the Internet of Things into intelligent logistics supply chain management, the visual supply chain can also be achieved. The intelligent logistics supply chain of the Internet of Things in the network can mark each logistics product in operation, endow the product with a unique label containing the product resource information, and combine the label information in the product identification can promote the efficiency and precision of the manager identification, and realize more efficient product management work [9].

The platform can keep the risk reserve in advance according to the corresponding financing quota, and weaken the loss through the risk transfer, on the one hand, sign the contract with the financing

enterprise, and on the other hand, transfer the risk to other business subjects. After the beginning of financing, the use of big data to regulate the direction of the funds. Secondly, the information is classified and the data desensitization technology is introduced to convert the customer information into virtual data [2]. Establish customer entrustment contract, make clear the direction of using information, and may not misappropriate customer information. The most important thing is to increase investment in technology research and development, recruit talents from professional industries, continuously improve technology, and improve big data's control and control system.

4. Conclusion

From the example of JD, it can be seen that enterprises can establish efficient information systems through intelligent transformation to improve the efficiency of coordination and supply chain processes so that they can predict and respond to risk events more quickly. However, in the process of transformation, the imperfect or immature application of intelligent technology will also lead to an increase in enterprise risk. Maximizing the advantages of digitization and avoiding potential risks is the problem that every transitional enterprise needs to solve in the future.

To maximize the advantages of digitization and intelligence and avoid potential risks, in the transformation of digitization and intelligence, it is very important to deeply understand the industry and specific business in which enterprises are located. Understanding the characteristics, trends, and potential digital opportunities of the industry will help to make a more targeted digital transformation. Enterprises can define the vision, goals, and plans of digitization by developing a comprehensive digital strategy. At the same time, enterprises can choose and invest in the most suitable for enterprise business advanced technologies and tools, such as artificial intelligence, big data analysis, the Internet of things, and so on. These technologies can improve efficiency, reduce costs, and bring innovation and competitive advantage to enterprises. In the process of digitization, to ensure the information security of enterprises and customer privacy is fully protected. Adopt advanced security technology and establish sound security policies and processes to prevent potential digital risks and network attacks. The development of digital leadership is the key to the success of digital transformation. Leadership should have digital thinking, be able to lead teams to adapt to new technologies, and new methods, and encourage innovation. Close partnerships can also be established with technology providers, innovation companies, and other partners. This helps to obtain new technologies, and new ideas, and accelerate the progress of digital transformation.

Given the risks and challenges that the digital process may face, a sound crisis management mechanism should be established. Timely detection of problems and rapid response are the keys to avoiding potential risks.

By comprehensively considering the above suggestions, enterprises can better give full play to the advantages of digitization and intelligence, avoid potential risks, and achieve a more robust and sustainable transformation. This not only helps to improve the competitiveness of enterprises but also adapts to the rapidly changing market environment and lays a solid foundation for future development.

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