



Analysis of the Role of Business Negotiation in Realizing Supply Chain Management Information Sharing

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Abstract. With the development of big data technology, information management in the supply chain has become a crucial part of the supply chain. Information sharing becomes a vital part of information management in the supply chain, which can help each node enterprise make immediate and accurate decisions and effectively reduce the bullwhip effect in the supply chain. Therefore, some core enterprises try to construct information-sharing platforms to solve the problem of information asymmetry. This paper emphasizes the importance of sharing information by reviewing the bad impact of the bullwhip effect on the supply chain. This paper analyses that the problem of information security, funding, and advanced technology and the decrease in the competitiveness of companies are the main reasons that lead some companies in the supply chain to refuse to share information. This paper suggests that core enterprises can realize information sharing in the supply chain through effective business negotiation. Besides, frequent communication and consideration of both parties' interests during negotiation are effective suggestions for achieving information-sharing in the whole supply chain to reduce the decision-making bias and ultimately improve the benefits of the whole supply chain.

Keywords: Information Sharing, Bullwhip Effect, Business Negotiation.

1 Introduction

Information sharing has become an important issue in the world. With the continuous development of information technology, the competitiveness of the supply chain between enterprises gradually deepens to the competition of supply chain information management, information asymmetry becomes a serious problem in the supply chain. According to QingLi Da, and Qin Zhang, due to the inaccurate information being transmitted in the supply chain, manufacturers pay the excess cost, which has a bad impact on the enterprise's benefit [1]. Thus, information sharing in supply chain information management becomes an important way to make decisions, helping companies downstream and upstream to make good connections, which can realize the cost decreasing and benefit increasing and improve the competitiveness of companies. However, realizing information sharing not only exposes organizations to investing large amounts of

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costs and staff but also to the problem of information leakage reducing the competitiveness of enterprise in the market, and a series of other problems that are harmful to the interests of the company. Thus, some small-scale enterprises in the supply chain can not realize the information sharing. Business negotiation is an effective way to solve problems in the supply chain, which can help each node's enterprises make a balance when they meet some conflicts. Based on the significance of the practice, studying the application of business negotiation in supply chain information management can be an effective way to help enterprises build a friendly relationship and definite the responsibility among each node company in the supply chain and further develop relevant rules. Thus, this article concentrates on the effect of negotiation in realizing supply chain information sharing. this article finds out the importance of sharing information in the supply chain illustrates the reasons why some companies fail to share information, and gives suggestions based on the perspective of business negotiation for how to share information in the supply chain.

2 The Importance of Sharing Statistics in the Supply Chain

2.1 Controlling Cost

Controlling costs is a major concern of many enterprises. In recent years, supply chain cost has become a main focus in many kinds of industries. Because there are many kinds of costs are is an increasing trend in the supply chain, which impacts enterprise performance. Due to the development of the level of information technology is not good, many companies in the supply chain can not grasp up-to-date information, which may lead to them making some mistakes in forecasting demand. For instance, Suppliers and retailers in the supply chain receive completely different information. To be specific, retailers close to the terminal in the supply chain. Thus, retailers can get more accurate details from customers. However, suppliers are often not well informed about market attitude and demand [2]. It will lead to an increase in cost in the supply chain to a degree. Such as storing cost, and purchase cost. According to The 2018 China Warehousing Industry Development Report, the storing cost indicated an upgrading trend in China from 2013 to 2017 as shown in Fig 1 [3]. To be specific, the figure for inventory cost in 2013 was 756.03 billion and this data arrived 10850 billion in 2017. According to The Manufacturing Challenge and logistics response under Supply Chain Change, the cost of inventory was in a higher position over four years [4]. To solve this problem, China has devoted itself to constructing an information platform. To tackle the problem of increasing costs, many companies construct sharing information platforms generally.

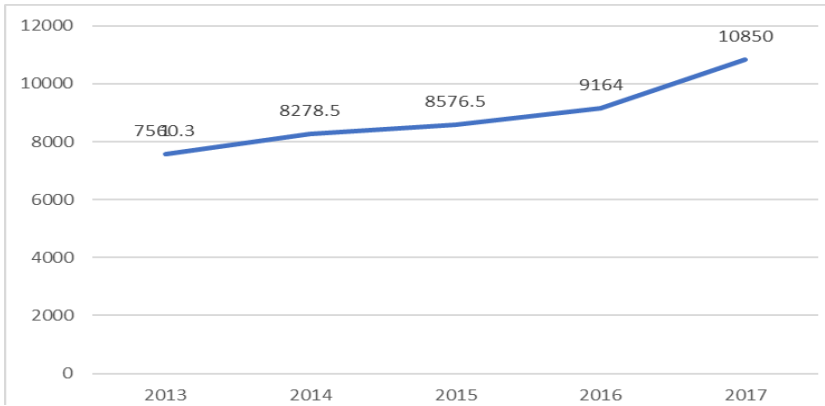


Fig. 1. Storage costs during 2013-2017 [3].

2.2 Supply Chain Break Risk

Information asymmetry may lead to many problems in the supply chain. For instance, the production planning is not symmetrical and inventory information is not symmetrical. So, nowadays, the problem of supply chain breaking has risen to the focus of attention of all countries. During the pandemic, the demand of consumers had a big wave. The consumers' demands for some products surge quickly, such as daily necessities, especially medical supplies. This leads to changes in demand at different parts of the supply chain. This is a phenomenon of accelerated amplification of demand from the bullwhip effect. Rafati E, Bullwhip effect refers to a distortion and amplification of demand variation in the supply chain from sales sections to supply sides [5]. For example, in the medical supplies industry during the epidemic, consumers' demand for masks surges, and the retailers' upstream suppliers will order more masks from manufacturers than the order quantity. Due to the delay of information transmission in the supply chain, upstream enterprises can not grasp the downstream information promptly. Therefore, the manufacturer not only does not have enough materials to produce the corresponding amount of masks to actively respond to downstream demand, which led to a serious break in the supply chain. Thus, sharing information immediately is crucial for the supply chain to respond to demand timely.

2.3 Loss of Overall Profit

Huang et al. concluded that the profits of each node enterprise will be improved through information-sharing [6]. However, it may increase the profit of the individual company and does not benefit the whole supply chain. Thus, some companies do not provide their information in the supply chain, which brings many kinds of problems. For instance, when each enterprise in the supply chain makes production planning, storage planning, or market forecasts and pricing strategies, they can not fully grasp demand and supply information from the upstream and downstream companies, which will lead to decision-making errors. It will affect the overall performance level of the supply

chain to a degree. Besides, to keep their competitive position in the supply chain, some industries hope to maintain their current status through technical innovation, and the core enterprise wants to obtain real problems from every part of the supply chain to innovate the supply chain. However, due to every company in the supply chain's lack of mutual trust, they choose to cover their real situation. Therefore, further technology development in the core enterprises has been limited. For example, some physics companies on the supply chain want to decrease the cost of the supply chain by constructing a supply chain platform, which needs to collaborate information from all links of the enterprise. For instance, the car-free transport platform in the supply chain needs to effectively match the source of cars and goods provided by each node enterprise. However, some vehicle companies to prompt their profits, provide false information, which impacts the overall performance of the supply chain to a degree.

3 Reasons

3.1 Corporate Concerns about Information Security

Information sharing may lead to the problem of information disclosure. To escape information leakage, the node companies may provide the wrong information to ensure their profits or protect the safety of information [7]. Due to the enterprise's need to consider the safety problem, they choose not to share some important information with their cooperative companies. According to The 2019 Data Breach Cost Report, The reason why companies will lose a large part of their business is data leakage, which will reduce their benefits. The average cost of data leakage globally was in a high station. To be specific, the statistics in 2019 presented an increasing trend from \$3.5 billion to \$3.92 billion from 2014 to 2019. Thus, some companies in the supply chain do not want to share their vital information, which may lead to considerable problems [8].

3.2 Lack of Funding and Technical Support

If the core company in the supply chain wants to realize information sharing, each node also needs information technology to support it. It mainly includes sensing technology, computer technology, and communication technology. Feng et al. concluded that information technology generally appears in the form of information systems such as MRP, ERP, or logistics tracking systems in enterprise management [9]. Therefore, a supply chain needs to achieve information sharing and the core company in the supply chain needs to construct an information-sharing platform, which needs to contain data storage, data processing, data analysis, and data security functions to ensure the effectiveness of its platform. After the data is integrated through network communication technology, each node enterprise in the supply chain needs to have a further analysis in statistics, which can extract key information. Then, enterprises can adjust their production or storage planning through the effective information in the platform. Meanwhile, security technology is required to maintain the platform. The steps to develop the information platform are very complicated and require continuous guidance from professionals. Therefore, the construction of the platform and providing staff need high costs.

It is the reason why small-scale companies in the supply chain do not want to invest too much energy to share information with their partners in the supply chain, which increases the extra costs for some small-scale enterprises.

3.3 Reduce the Competitiveness of Enterprises

As information sharing increases the transparency of information, it will lead all kinds of information to become transparent, which leads to information leakage to a degree, such as business conditions, commodity prices, and strategies of enterprises at each node of the supply chain. “information leakage” is that sharing information can help manufactures who understand demand information adjust wholesale prices. Retailers can infer more sharing information through transparent wholesale prices [10]. For example, when a dealer conducts business negotiation with a supplier, it will get more information from the other side, such as price, quality, and quantity information. This will help dealers have a strong negotiation position. However, it may reduce the competitiveness of manufacturers in the supply chain.

4 Suggestions

4.1 Sign an Agreement

Due to information leakage being very serious to the loss of each enterprise, the core company needs to ensure the information security of the other party and reduce worries of each node enterprise in business negotiations. Both parties need to sign a confidential agreement, which can help these enterprises ensure information security and trade secrets. Sai Yu Qi et al. believe that to increase information security, some crucial and essential information needs to control the scope of data accessibility through blockchain technology [11]. Thus, when the core company signs the agreement with each node enterprise, they need to make sure the range of confidential information, the period of confidentiality, the firewall, and the quantity of access to ensure the safety of transmission information. Meanwhile, when both sides make a negotiation for safe information, some small-scale companies can ask the core enterprise to limit the range of sharing information. To be specific, the core enterprise needs to promise that the scope of information is limited to cooperative enterprises. Moreover, the core enterprise also needs to make different levels of protection, which are provided for different sensitivity of information. During the negotiation process, each node company can request the core enterprise to provide a chance to evaluate the platform regularly, which can respond to emergencies through monitoring technology. However, each node enterprise needs to promise availability and effectiveness. Thus, when the core enterprise attempts to persuade the small-scale company in the supply chain, they need to promise the safety of sharing information and each node company must update their information. Thus, business negotiation can help the two sides to communicate the details in the agreement. This is an effective way to assist two parties to agree. Meanwhile, the use of negotiation skills can maximize the interests of both sides.

4.2 Taking into Account the Interests of Both Parties

The development of an information platform needs more financial and technical support. Both sides need to find their interests during the process of negotiation. Huang considered that bilateral companies need to abide by the principle of the primacy of interest. Moreover, considering the interests of both parties is also important in business negotiation [12]. The interest of the core enterprise is to illustrate each node enterprise to share information, which will increase the ability to forecast demand for each part of the supply chain, enhancing the profits in the whole supply chain. Besides, the interest of each node enterprise is to devote more funding and technology to solve the problem of the lag in technology. Therefore, when the two sides are unable to make the next step due to the price and technology issues, Qing Xie concludes that the two sides can make reasonable concessions to reach an agreement [13]. Therefore, the two sides can add some additional clauses to solve this tense situation. For example, the core enterprise needs to ensure the security of information by promoting the maintenance of the platform and providing technical and financial support for the small-scale company in the supply chain. During the progress of negotiation, each node company promises to the core enterprise which can monitor the platform regularly. Moreover, some companies in the supply chain will adjust the price of purchase and sales in the mature stage of establishing the platform. Thus, in the supply chain, the interests of the two parties are a critical point in the negotiation, which can assist the two sides to make a balance by adding additional provisions in the negotiation, making a successful order in the end.

4.3 Regular Negotiation

Regular negotiation can improve information accuracy and reliability, decreasing misunderstandings and mistakes in decision information. According to the research by R Cui, G Allon, A Bassamboo, and JA Van Mieghem, decision deviations result in shared information being distorted [14]. Both sides need to make sure the information is updated and effective through regular communication. Besides, the core company needs to construct an effective feedback mechanism through negotiating with the corporate enterprises, which ensures some problems can be understood immediately. Moreover, The two sides need to negotiate about assessing the performance of sharing information regularly to effectively adjust the mechanism of sharing information and improvement measures, which can help the whole supply chain to reduce the decision bias to a degree. The core enterprise can encourage every node enterprise of different roles to conduct regular negotiations and communication and ensure that all departments fully consider the objective of the entire supply chain when making decisions, avoiding decision bias and local interests. So, regular negotiations can ensure the accuracy of information, which can improve the precision of decisions, promoting the benefits of the whole supply chain.

5 Conclusion

Nowadays, information asymmetry leads to inaccurate decisions made by enterprises, which becomes a serious reason for increasing the operating costs in the supply chain. Thus, information sharing becomes an important part of supply chain information management. Then, the core company in the supply chain tries to solve the problem of sharing information by constructing an information-sharing platform. However, conventional enterprises stop sharing information due to information leakage, lack of financial support, lack of relevant talents, and the problem of excessive information transparency. This article concludes that the core business can improve the degree of sharing information through business negotiation with each node enterprise in the supply chain. Besides, negotiation is also an effective way to understand the problem of information sharing in a timely, which can update the relevant technology. Then, this article also makes suggestions during the negotiation. The core enterprise needs to take full consideration of the interests of each part companies in the supply chain. Besides, they need to take action based on these problems. When the core company meets deadlock in negotiations, they need to make some creative options based on the interests of each node enterprise to tackle the deadlock. Thus, the core enterprise company need to consider the concerns of node companies and make relevant policy or provide support for them.

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