

Research on the Subject, Object and Content of the Integration of Dual Channel Supply Chain

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Abstract

In order to keep pace with the development of the times and adapt to the development trend of the market economy, many companies have implemented electronic direct sales channels (online channels/ online channels) controlled by manufacturers while retaining the original traditional retail channels (offline channels). This article mainly conducts research from two aspects of the integrated subject, object and content, and provides theoretical support for the decision-making of dual-channel supply chain integration.

Keywords

Supply Chain; Integration; Dual Channel.

1. Introduction

The diversity of customer needs in the development process of the e-commerce era promotes the implementation of a dual-channel strategy for companies. The successful combination of online and offline channels can improve market penetration and effectively transfer value. Boehm proposed that the promotion of multiple channels can improve the competitive advantage of enterprises, because regardless of the customer's information choice and channel choice, it will increase the customer base and increase customer loyalty [1]. Combining traditional offline channels with electronic channels requires a large amount of capital investment, and at the same time increases corporate operational risks. Innovative information systems are accompanied by a higher risk rate [2]. The implementation of dual channels needs to coordinate the benefit sharing issues between traditional retailers and electronic direct sales channels. If there is no systematic decision-making mechanism and operation mode, the channels will pose a threat to each other, harm each other's interests, and trigger channel supply. Conflicts between chain members. However, before making all decisions, the first thing to do is to clarify the subject, object, and content of the dual-channel integration.

2. The Subject and Object of Dual-channel Supply Chain Integration

2.1. The Main Body of Dual-channel Supply Chain Integration

In the dual-channel supply chain, manufacturing companies act as the core integration entity, and suppliers and retailers participate in the integration. Manufacturing companies have opened up online electronic direct sales channels, as well as traditional offline sales channels. As the core enterprise of dual-channel supply chain integration, manufacturers need to integrate internal and external resources at the same time. The efficiency of integration is directly related to the effectiveness of the entire dual-channel supply chain [3]. In order to improve the operational efficiency of the online and offline dual-channel supply chain, manufacturing companies need to maintain good cooperative relations with upstream

suppliers and downstream retailers, coordinate and integrate existing resources in the supply chain, and achieve a win-win situation [4].

Manufacturers play a major role in enhancing the customer value of end users. Manufacturers simultaneously open up online electronic direct sales channels and offline traditional channels, and need to redesign product types, sales models, and service characteristics to meet consumer preferences in different channels. Online direct-sale electronic channels are based on e-commerce platforms. In the Internet era, the availability of information has brought convenience to consumers. Consumers obtain product-related information through the platform to decide whether to take consumer behavior in this channel [5]. Different channels bring different purchase costs to consumers, and different product characteristics also cause consumers to have different channel preferences. Therefore, in view of the characteristics of different channels, manufacturing companies need to classify products and focus on promoting products that meet the channel characteristics in different channels. Offline channels pay more attention to the requirements for service quality and the consumer experience process; online channels provide a free social platform that enables manufacturers and consumers to communicate without barriers. Therefore, as the main body of integration, manufacturers need to design a dual-channel effective service system, guide consumers with different preferences to choose channels, and at the same time cultivate customer loyalty. After manufacturers have opened up online channels, they pose a threat to the interests of retailers in offline traditional channels [6]. In order to alleviate channel conflicts, manufacturing companies have played a key role in the distribution of benefits [7].

Manufacturers need to strategically cooperate with upstream suppliers to share inventory information and production information, thereby reducing the company's operating costs. The core of the operation of a manufacturing enterprise lies in quick response to the market, agile production, accurate control of inventory, and reduction of procurement and inventory costs. The core idea of dual-channel supply chain integration lies in cooperation, sharing and collaboration. Dual-channel supply chain is a whole of interests. In order to improve the overall operation efficiency and enhance the common interests of all participating enterprises, each enterprise needs to actively participate in the cooperation of supply chain. Channel conflict and free-riding are the main risks in the process of dual-channel integration. If there is no interest balance between offline traditional channels and online channels, offline traditional retailers will be in an awkward position and lower prices. Lower prices pose a threat to the overall interests of manufacturers. Therefore, in order to achieve a win-win situation, it is necessary for manufacturers and offline retailers to carry out strategic alliances. While constraining each other's economic activities through contractual cooperation, manufacturers formulate certain compensation mechanisms for retailers so as to encourage retailers to actively participate in integration. The integration content of the dual-channel supply chain involves the operation of the entire supply chain. Information flow and logistics are the main content of the "three streams" of the supply chain. In the process of integrating the dual-channel, suppliers, manufacturers, and retailers need to play a good role. The role of resource sharing is to reach a contract for information sharing, knowledge sharing, and technology sharing with each other to maximize overall benefits [8].

2.2. Objects of Dual-channel Supply Chain Integration

The object of dual-channel supply chain integration is the object in the process of dual-channel supply chain integration. The purpose of dual-channel supply chain integration is to improve the operational efficiency of the dual-channel supply chain, expand the synergy effect of the channels, and maximize the benefits of each participant in the supply chain. The method and the specific content of the integration are the objects of the dual-channel supply chain integration in this study. Therefore, the object of dual-channel supply chain integration

involved in this paper mainly includes the key indicators that play a decisive role in enterprise operation decision-making, the model and operation mechanism of dual-channel supply chain integration and decision-making activities in the process of dual-channel integration.

The operation process of dual-channel supply chain is composed of a series of value creation activities [9]. By analyzing the value creation process of dual-channel supply chain and drawing the flow chart of value creation, the key value creation activities, as well as the ways, methods and contents of value creation can be found from the internal and external perspectives of enterprises. Dividing the measurement dimensions of value creation from the perspective of the main body of the dual-channel supply chain integration can find the key value creation activities that each main body participates in, and conduct targeted analysis of indicators. Every value creation activity can find a key measurement indicator, and each indicator plays a key role in the overall benefits of the dual-channel supply chain. These key indicators and their related business operations together constitute the specific content of the dual-channel supply chain integration.

In the operation of the dual-channel supply chain integration model based on key indicators, it is necessary to discuss its decision-making model and operation mechanism, so as to facilitate the decision-making of each integration subject in enterprise operation activities. In the dual-channel supply chain, the online and offline channels are independent and connected entities. After integration, it is necessary to redesign the online and offline resource integration content, price integration decisions, and relevant measures to prevent free-riding behavior. In order to ease channel conflicts, reasonable incentive measures should be designed for offline retailers and corresponding restraint mechanisms should be formulated for each participant based on the mechanism of each indicator. The core of dual-channel supply chain lies in sharing cooperation. Therefore, in the process of integration, virtual resources and knowledge should also be taken as the object of integration to build the sharing mechanism of dual-channel supply chain, and analyze the model collaborative operation mechanism of dual-channel supply chain with these objects as the content of integration.

3. Content of Dual-channel Supply Chain Integration

3.1. Macro Perspective

3.1.1. Integration of Value Creation Activities in the Supply Chain Operation Process

The integration of online and offline supply chains is not simply an optimized allocation of resources, but also a process of tapping channel value creation [10]. No matter what strategies and measures an enterprise adopts, it always takes corporate profits and social interests as the starting point. The operation process of the dual-channel supply chain is split and then integrated, that is, the online and offline activities of the supply chain are subdivided and analyzed, find out the main activities to create value, and then on the premise of interaction, the actual activities of the dual-channel supply chain operation are planned for the process, and the core activities of value added after integration are found. In the process of splitting, it is necessary to analyze the core role and main activities of each node enterprise in the supply chain, including the core bond relationship with upstream and downstream enterprises, especially the role played by the enterprise in the connection with the end user. The methods and effects achieved in actual activities, and the value creation of the entire supply chain are the main content of research and analysis.

3.1.2. Integration of Factors Affecting Channel Selection

Consumers' choice behavior is reflected by their own and external factors. The result of consumers' choice of channels directly affects the distribution of benefits between online and offline channels. The main reason for channel conflict is the distribution of benefits. Therefore,

the influencing factors of consumer channel choice are directly related to the effect of channel integration. Through the research and analysis of the influencing factors of consumers' channel choice, it is beneficial to integrate the enterprise activities related to factors, and invest more capital in these activities, so as to guide consumers' behavior and weaken the conflicts between channels [11-13]. Online and offline factors affecting consumer choice are different, and there may be conflicts. Therefore, the purpose of integration is to achieve synergy.

3.1.3. The Issue of Compensation for Benefits between the Manufacturer and the Retailer

The stakes for manufacturers to develop online channels to retailers are not absolute. After manufacturers open up online electronic channels, retailers will not be absolutely threatened to their own interests because of the reduction in wholesale prices. Appropriate price adjustments can make the overall benefits of both online and offline channels [14-15]. In addition, it is possible to incentivize retailers to improve their service levels [16]. The characteristics of dual-channel supply chain are that manufacturers will provide orders to retailers in a certain proportion after opening online channels, and online channels may cause certain profit losses to the retail channels to compensate. Therefore, in the process of dual-channel integration, it is necessary to develop a set of scientific and effective benefit compensation mechanism, so as to maintain the interest relationship and long-term cooperative relationship between retailers and manufacturers. In addition, it is beneficial for manufacturers to carry out reasonable profit distribution, eliminate the profit loss of online channel to offline traditional channel, and further improve the fit of dual channel integration.

3.1.4. Integration of Interactive Experience between Online and Offline

In the Internet age, consumers pay attention to the interactive experience process in the consumption process, and subjective feelings in the experience process are one of the important factors influencing consumers to form product loyalty and channel preferences. The online experience of the Internet environment is more of a virtual experience, while the offline has a real physical environment that can give people a real experience. Online virtual experience can provide an information feedback platform for experiencers, and any information reflected in the experience process can provide a basis for the service improvement of offline actual experience. Through online and offline interactive experience integration, not only meets the needs of consumers' experience, but also a process in which online and offline experience services promote each other.

3.2. Microscopic Perspective

3.2.1. Products

Product integration is to achieve consistency between online and offline products. Nowadays, in order to maintain the sales of offline products and the interests of retailers, especially in the clothing industry, the updating speed of products in the online channels of general brands is slower than that in the offline channels, and the varieties are not as complete as those in the offline channels, and most of them are out-of-season products. Product consistency also includes ensuring product quality and supervising manufacturers to produce products of different quality specifications based on different channels and costs. The consistency of products is more to provide a kind of support for the dual-channel operation mode of offline experience and online consumption. Through the actual experience of offline products, a willingness to shop is formed, and products are obtained through online payment, and the products reach consumers through online channels. Therefore, the quality of products experienced offline is required to be consistent with the quality of products obtained online, reducing the risk of corporate irregularities.

3.2.2. Service

The integration of online and offline services is to ensure the consistency of the added value of the products received by consumers, weaken the bias of channel selection due to different service quality due to different channels, and minimize the coefficient of influencing factors of service quality. Online services are more about information consultation, screening, and matching. Offline services can have more direct professional advice and sensory experience. How to make consumers feel the balanced added value from different channels requires manufacturers to make use of online and offline advantages to provide the service content most in line with the preferences of consumers in this channel. Eliminate service differences between online and offline channels from the subtle point, aiming to better balance the respective advantages of dual channels and weaken the effect of service differences on channel conflicts.

3.2.3. Pricing

When an enterprise reaches a certain maturity stage, the operation cost of the enterprise is reduced by virtue of the platform force of online electronic channels, so the price of online products is usually lower than that of offline products. There are also enterprises in the initial stage of online channels, in order to provide the profits of online channels, constantly reduce product prices in order to attract consumers' attention. Online and offline channels operate in different ways, leading to different operating costs and product pricing. In order to reduce the conflicts between online and offline product prices, pricing integration needs to develop an effective pricing strategy and compensation mechanism, and seek an optimal price range through online and offline interaction to balance online and offline interests.

3.2.4. Order distribution

After a manufacturer develops a new online channel, it will affect the sales volume of the original channel no matter whether the effect of the two channels is synergistic effect or encroaching effect. This effect is that the sales of the entire supply chain have increased, and the sales of retailers have also increased, or the sales of the entire supply chain have increased but the sales of retailers have decreased, or the sales volume of supply chain remains unchanged, but the online channel carries out sales allocation, leading to lower sales volume of retailers, even lower than the online channel. Therefore, when conducting online and offline dual-channel integration, in order to encourage enterprises in the supply chain to participate in supply chain activities and maintain cooperative relations, it is necessary to consider the relative balance of online and offline interests, and formulate a set that is in line with the company's industry and development status and actual market competitiveness. Order distribution mechanism to ensure the incentive of healthy competition between retailers and the entire supply chain.

3.2.5. Inventory

Manufacturers open up both online and offline channels at the same time, so they need to adjust the inventory of the whole supply chain to minimize the influence of bullwhip effect on the supply chain. Different supply chain inventory modes are dominated by different nodal enterprises. For example, the centralized inventory is controlled by the manufacturer, the number of products of the retailer is controlled and shipped by the manufacturer, or the inventory is controlled by the retailer, and the inventory of both online and offline channels is shipped by the retailer. In addition, inventory distribution management can also be carried out according to the different principles of online and offline channels, that is, offline and online each has its own inventory management organization and system, and they operate separately. In the process of dual-channel integration, it is necessary to formulate an inventory mechanism that has the lowest cost and is most conducive to achieving synergy between online and offline.

3.2.6. Logistics

With the integration of dual channels, cost control, and online and offline interaction and coordination, logistics activities in the dual channels occupy an indispensable and important position. Whether you purchase through online channels or experience online purchases offline, you must rely on logistics and delivery to customers. How to distribute, where to deploy out of the warehouse, and the coordination of online and offline warehouses are all issues to be considered when integrating logistics.

4. Conclusion

The purpose of supply chain integration is to improve the operational efficiency of the supply chain, enhance the competitive advantages of each node enterprise, and continue to provide customers with higher value. This article analyzes the object of integration from the subject and object, and analyzes the content of integration from both the micro and macro perspectives. In order to effectively integrate resources between manufacturers and supply chain partners, coordinate and manage various process activities within and between organizations, and achieve the effectiveness of information, products/services, and decision-making through sharing and cooperation, and to achieve maximum customer value at the lowest cost, it is necessary for partners to continuously adjust the content and methods of integration according to the market environment and their own development conditions.

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References

- [1] Morash, E. A., Clinton, S. R.. Supply chain integration: customer value through collaborative closeness versus operational excellence [J]. *Journal of Marketing Theory and Practice*, 1998;6 (4). 104-120.
- [2] Boehm, M.. Determining the impact of internet channel use on a customer's lifetime [J]. *Journal of Interactive Marketing*, 2008, 22 (3), 2-22.
- [3] Flynn B B, Huo B, Zhao X. The impact of supply chain integration on performance: A contingency and configuration approach [J]. *Journal of Operations Management*, 2010, 28(1):58-71.
- [4] Mingang Zeng, Qianqian Wu. Research on the relationship between supply chain design, supply chain integration, information sharing and supply chain performance [J]. *Industrial Engineering and Management*, 2012, 17(4):8-14.
- [5] Thoo A. C., Abu B. A. H., Amran R., Low H. H.. The Impact of Supply Chain Integration on Operational Capability in Malaysian Manufacturers [J]. *Procedia-Social and Behavioral Sciences*, 2014 (130): 257-265.
- [6] Steinfield, C.. Does Online and Offline Channel Integration Work in Practice? [R] Workshop on E-Commerce Impacts Revisited, DIW- Berlin, 2004:15-17.
- [7] Deleersnyder, B., Geyskens, I., Gielens, K., Dekimpe, M.. How cannibalistic is the Internet channel? A study of the news thesis industry in the United Kingdom and The Netherlands [J]. *International Journal of Research in Marketing*, 2002, 19 (4), 337-348.
- [8] Stevens, G. C. Integrating the Supply Chain [J]. *International Journal of Physical Distribution and Materials Management*, 1989, 19(8):320-325.
- [9] Changchun Yu. Research on the Value Creation Mechanism of Service Modularity Based on Value Chain [D]. Doctoral Dissertation of Jiangxi University of Finance and Economics, 2012:33.
- [10] Joseph Schumpeter. *Capitalism, Socialism and Democracy* [M]. Beijing: The Commercial Press, 2000

- [11] Bailer C. Stocking the customer experience[J]. CRM Magazine. 2006,10(9):15.
- [12] Gefen D. E-commerce: the role of familiarity and trust. Omega: The International[J]. Journal of Management Science, 2000,28(6):725-737.
- [13] Harvin R. In Internet branding, the off-lines have it [J]. Brandweek, 2000,41(4):30-41.
- [14] Cattani K D, Gilland W G, Swaminathan J M. Boiling frogs: pricing strategies for a manufacturer adding a direct channel that competes with the traditional channel[J]. Production and Operations Management, 2006,15(1):40-57.
- [15] Tsay A A, Agrawal N. Channel Conflict and Coordination in the E-Commerce Age[J]. Production and Operations Management, 2004, 13(1):93-110.
- [16] Yan R, Pei Z. Retail services and firm profit in a dual-channel market. Journal of Retailing and Consumer Services [J]. 2009, 16(4):306-314.