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The Current Situation and Challenges of Supply Chain Management: Taking Huawei as an Example

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Abstract: Globalization has extended the supply chain to many countries and regions around the world. Enterprises not only have to manage local suppliers but also work with multinational suppliers, manufacturers, logistics service providers, etc. The supply chain network has become complex and full of uncertainty. This paper aims to explore the importance of supply chain management in the modern business environment and analyze how to improve the efficiency and reliability of the supply chain through optimization and innovation. First, this paper will introduce the basic concepts and principles of supply chain management. Then, through literature analysis and network data analysis and taking Huawei as an example, this paper will deeply explore the methods and technologies of supply chain optimization, including Huawei's inventory management, demand forecasting and logistics optimization. Finally, this paper will discuss the importance of supply chain innovation and propose some feasible innovation strategies. This paper finds that supply chain management is changing from the traditional "cost efficiency orientation" to "risk management and resilience building".

Keywords: Supply Chain Management, Supply Chain Management Optimization, Supply Chain Innovation, Huawei.

1. Introduction

Supply chain is an indispensable part of modern enterprise management, and reasonable supply chain management is needed to ensure the long-term development and competitiveness of enterprises. With the rapid development of digital technology and the continuous changes in the market environment, enterprises' supply chain management continues to face new challenges. This paper aims to explore the importance of supply chain management in the modern business environment and analyze how to improve the efficiency and reliability of the supply chain through optimization and innovation. First, this paper will introduce the basic concepts and principles of supply chain management. Then, through literature analysis and network data analysis and taking Huawei as an example, this paper will deeply explore the methods and technologies of supply chain optimization, including Huawei's inventory management, demand forecasting and logistics optimization. Finally, this paper will discuss the importance of supply chain innovation and propose some feasible innovation strategies. This paper can provide certain reference values for enterprises in supply chain management transformation.

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2. Basic Concepts and Principles of Supply Chain Management

Supply chain management is the management activity that involves the entire process from raw material procurement to the delivery of final products to consumers. It aims to maximize efficiency, reduce costs and improve customer satisfaction by coordinating and integrating the activities of each link in the supply chain.

2.1. Supply Chain Management Workflow

Supply chain management deals with the entire production process of a good or service - from the raw components all the way to the final product being delivered to the consumer. To accomplish this task, a company needs to create a network of suppliers that transfer products from suppliers of raw materials to organizations that deal directly with users. This organic integration of supply chain management ensures that production processes work in tandem, allowing companies to respond to market demands more flexibly and efficiently.

2.2. Traditional Supply Chain Management System

Traditional supply chain management systems include five components: planning and management, procurement, manufacturing, delivery, and returns.

Planning and management require all the resources needed to meet customer demand for a company's products or services. After a company establishes a supply chain, it determines metrics to measure whether the supply chain is efficient and effective, bringing value to customers and achieving company goals. Then it is necessary to select suppliers who can provide the goods and services needed to create products. Then, establish processes for monitoring and managing supplier relationships. The key processes of procurement include: ordering, receiving goods, managing inventory, and authorizing supplier payments. Then manufacturing needs to organize the activities required to receive raw materials, manufacture products, inspect quality, package and transport, and arrange delivery. The logistics needs to coordinate customer orders, arrange delivery, dispatch goods, invoice customers, and receive payments. If the product is defective, surplus, or the customer does not need it, it needs to be returned.

3. Methods and Technologies for Optimizing Supply Chain Management - Taking Huawei as an Example

3.1. Introduction to Huawei

Huawei's brand development process can be roughly divided into the following stages. In the initial stage, Huawei focused on the domestic market, providing communication network equipment, and quickly occupied the market share with its ultra-high cost-effective products. After the 21st century, Huawei began to turn to the international market. During this period, Huawei's brand strategy focused on improving its technological innovation capabilities and gradually established a brand image of technological leadership. With the global expansion of its business, Huawei further clarified its brand strategy, that is, to lead the market through technological innovation [1]. Huawei Technologies Co., Ltd. ("Huawei") was founded in 1987 and is a leading global provider of ICT (information and communication) infrastructure and smart terminals. Huawei is committed to bringing the digital world to everyone, every family, and every organization, and building a smart world where everything is connected. However, Huawei's core mobile phone chip technology and equipment still rely on imports, and there is a risk of chip supply shortages. The "breakpoint" of the chip industry chain has a negative impact on the resilience of the supply chain, and external risks threaten the stability of the

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mobile phone chip supply chain [2]. On February 4, 2024, Counterpoint Research released data, pointing out that the key factors for Huawei to regain the top sales in the Chinese smartphone market are the Mate60 series with 5G-level chips and the success of the HarmonyOS operating system. In the third quarter of 2023, Huawei broke through the 5G chip and launched the Mate60 Pro mobile phone, which instantly set off a nationwide rush to buy. In the fourth quarter, according to data from the International Data Corporation (IDC), Huawei ranked fourth in China's smartphone market shipments with a market share of 13.9%, a year-on-year increase of 36.2%, returning to the top five in the Chinese market. Huawei's comeback against the wind is due to the strong support of the Chinese government and consumers, and more importantly, its identification of risks and the reshaping of supply chain resilience [3].

3.2. Reasonable Inventory Management

As a leading global supplier of communications technology and consumer electronics, Huawei's inventory management plays a key role in supporting its global operations and responding quickly to market demands. Huawei has adopted an advanced intelligent supply chain management system that integrates Internet of Things (IoT), big data analysis, and artificial intelligence (AI) technologies to achieve real-time inventory monitoring and accurate forecasting. Through IoT devices, Huawei is able to monitor inventory levels in various warehouses and production bases in real time to ensure the timeliness and accuracy of data. Using big data and AI algorithms, Huawei is able to analyze historical sales data, market trends, and other relevant factors to accurately predict future inventory needs and reduce the risk of overstocking and out-of-stock. Based on the forecast results, the system is able to automatically generate replenishment orders, optimize inventory levels, and ensure the efficient operation of the supply chain. Considering supply risks and demand fluctuations (supply risks include delayed delivery by suppliers, disruptions in raw material supply, natural disasters, political instability, etc.), the normal operation of the supply chain may be affected. In order to mitigate supply risks, companies should reduce their dependence on a single supplier or a single region. By establishing relationships with multiple suppliers, companies can respond more flexibly to supply disruptions. At the same time, companies can use supply chain management software and sensor technology to monitor all links in the supply chain and related risk factors in real time, which may include regular review of inventory levels and reassessment of supply risks. In addition, the application of these technologies can help companies identify potential risks earlier and develop appropriate inventory response strategies to ensure that there is enough safety stock to meet demand when supply is disrupted [4].

3.3. Market Demand Speculation

Huawei mobile phones have made a good start in 2024 and are expected to continue to drive the industry chain to heat up. Sima Qiu, research director of international research organization Magillo Consulting, said that Huawei's organic light emmiting display (OLED) suppliers generally significantly increased their shipment expectations in 2024, and Huawei's smartphone shipments may be close to 60 million units. Among them, the order volume of the Huawei Mate 60 series continues to increase, and the target shipment volume of foldable screen mobile phones will also be adjusted to 10 million units. Last year, its shipment target for foldable screen mobile phones was only 2.6 million units. The increase in Huawei's mobile phone sales target has directly triggered changes in the supply chain, and some components are even facing a tightening supply situation. According to supply chain sources, Huawei is currently "sweeping" key components such as complementary metal-oxide semiconductor (CMOS) image sensors. Affected by the market supply and demand relationship, the

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price of CMOS image sensors has continued to rise, and some suppliers have increased their supply by 25% to 30% [5].

4. Measures for Innovation in Supply Chain Management

4.1. Establishment of a Flexible Supply Chain

The main purpose of establishing a flexible supply chain is to enhance the ability of enterprises to cope with uncertainty in a volatile market environment and enhance their competitiveness and resilience. The following are the main reasons for establishing a flexible supply chain: First, to cope with market demand fluctuations. In the modern market environment, customer demand changes rapidly and product life cycles are shortened. Flexible supply chains can respond to market demand fluctuations more quickly, reduce inventory backlogs or out-of-stock problems caused by supply and demand imbalances, and thus ensure sales and customer satisfaction. Through flexible production and distribution strategies, companies can quickly adjust production according to real-time demand to avoid overproduction or undersupply. Second, it is also necessary to resist the risk of supply chain disruptions. Natural disasters, epidemics, geopolitical conflicts and other emergencies may cause supply chain disruptions and affect production and delivery. A flexible supply chain can mitigate such risks through diversified suppliers, cross-regional alternatives, and rapid reconfiguration of production resources. For example, when Huawei responded to the US technology blockade, it maintained the continuity of the supply chain by developing new suppliers and establishing production facilities in different regions.

4.2. Utilization of New Technologies

Huawei's rapid return to the mobile phone market is due to its long-term technology research and development and product innovation. Even in adversity, Huawei continues to launch new products with differentiated competitiveness, and keeps up with the latest software and hardware technologies to firmly develop, and successively launches innovative technology bases such as Hongmeng and Euler systems, Pangu models, etc. In addition, from the perspective of brand influence, Huawei has established a good image and reputation in the global market for many years, which also lays the foundation for its return [6].

5. Conclusion

This paper explores the importance of supply chain management in the modern business environment and analyzes how to improve the efficiency and reliability of the supply chain through optimization and innovation. This paper uses Huawei as a case study and concludes that innovation in supply chain management should rely on the proposal of flexible supply chains and the application of emerging technologies.

References

[1] *Zhang Jingyun. Chinese brand globalization strategy: A case study of Huawei[J]. Brand Research, 2018(2): 3-7.*
[2] *Wang Xinhui. Research on the resilience of Huawei's mobile phone chip supply chain under the background of Sino-US technological competition [D]. Changchun: Jilin University, 2024.*
[3] *Zhao Limei; "Exploring strategies for improving the supply chain resilience of Military-civilian integration enterprises - Taking Huawei as an example" "Time-honored brand marketing"; Shijiazhuang Daily; 2024. Issue 10 (pp. 188-190)*
[4] *Qian Zhang, Research on Optimization of Enterprise logistics inventory Management under the Background of Supply chain, "China Logistics & Purchasing", 2024.10.*

DOI: 10.54254/2754-1169/149/2024.19262

[5] Jia Li 2024-02-06 Securities Daily "Huawei Retakes the "sales title" of China's mobile phone market Supply chain enterprises step up ordering and stocking", DOI: 10.28096/n.cnki.ncjrb.2024.000801

[6] Wang Peng, an associate researcher at the Beijing Academy of Social Sciences, told the Securities Daily reporter. ----Securities Daily/2024/February/6/Page B02.