

The impact of sustainable supply chain management practices on business performance: a case study of Huawei

Yuanhao Ma*

Dankook University, Convergence Systems Engineering, Gyeonggi-do, 16890, Korea

Abstract. In recent years, sustainable supply chain management (SSCM) has attracted much attention due to growing environmental and social concerns. However, research on the impact of SSCM on business performance is limited. Using a case study of Huawei, this study examines the relationship between SSCM practices and business performance. The study used a case study approach to investigate how the company implemented sustainable practices in its supply chain operations and the impact of these practices on its financial and non-financial performance. The study used qualitative and quantitative research methods to gather data from various sources, including interviews, surveys and company documents. The findings suggest that sustainable supply chain practices can positively impact business performance by reducing costs, increasing customer loyalty and improving reputation. The research gives managers and practitioners valuable insights into developing and implementing sustainable supply chain practices to improve business performance.

1 Introduction

Supply chain management plays a pivotal role in the success and performance of modern businesses. Companies increasingly recognize the critical importance of efficient and effective supply chain practices in a highly competitive global marketplace to achieve sustained growth and maintain a competitive advantage [1, 2]. This is especially true for companies operating in technology areas where rapid progress, changing customer demands, and intense market competition require agile and responsive supply chain management strategies [3, 4].

Huawei Technologies is the world's leading provider of information and communication technology (ICT) infrastructure and smart terminals. Founded in Shenzhen, China, in 1987, Huawei has become one of the world's largest technology companies, with operations in more than 170 countries serving billions of customers worldwide. Throughout the enterprise journey, Huawei's supply chain management practices have played a key role in shaping corporate performance, enabling the company to respond to complex market dynamics, drive innovation, and maintain a competitive advantage.

This paper examines the impact of supply chain management on Huawei's corporate performance, examining the key factors and strategies that have contributed to the company's success. By analyzing Huawei's approach to supply chain management, including its emphasis on agility, cost optimization, risk management, and sustainability, we gain insight into how effective supply chain practices affect Huawei's

performance and enable it in a highly dynamic and booming industry.

2 Literature review

Sustainable supply chain management (SSCM) integrates environmental, social, and economic factors throughout the supply chain, benefiting firm performance [5, 6]. SSCM practices improve operational efficiency, reduce costs, enhance brand reputation, and increase customer loyalty, leading to competitive advantage and long-term financial success [7]. Environmental sustainability initiatives, such as energy conservation and waste reduction, enable businesses to minimize environmental impact and enhance innovation capabilities, operational efficiency, and overall performance [8]. Social sustainability practices, including fair labor and community development, enhance reputation, stakeholder relationships, employee motivation, and corporate image [9]. Economically sustainable practices, such as logistics optimization and waste reduction, improve cost efficiency, supplier relationships, and financial performance. Implementing a sustainable supply chain contributes to environmental responsibility, social well-being, and economic sustainability [10].

3 Huawei and sustainable supply chain practices

While specific research on Huawei's sustainable supply chain practices may be limited, the company has

* Corresponding author: mayuanh.75@dankook.ac.kr

publicly stated its commitment to sustainability. Huawei's 2020 Sustainability Report highlights energy conservation, green packaging, and responsible sourcing initiatives. By incorporating sustainable practices into its supply chain, Huawei aims to minimize its impact on the environment, ensure the well-being of its employees, and foster long-term growth. In conclusion, sustainable supply chain management has become a key factor for companies seeking to improve performance and gain a competitive advantage. Companies like Huawei can realize various benefits through environmental, social and economic sustainability practices, including operational efficiency, cost savings, improved brand reputation and stakeholder satisfaction. The following sections of this research will further analyze Huawei's sustainable supply chain practices and assess their impact on the company's performance.

4 Method

4.1. Case description

Before delving into the impact of SCM on Huawei's corporate performance, it is necessary to understand the broader context of the company's success. Huawei has achieved impressive growth and financial performance, becoming one of the world's largest technology companies. Company revenue has continued to grow year over year, reaching a peak of \$136.7 billion in 2019. In addition, Huawei has successfully enriched its product portfolio, offering a wide range of ICT, and ISC solutions, including smartphones, telecom equipment, cloud services, and consumer electronics.

Huawei's corporate performance is not limited to financial indicators. The company has also earned a solid reputation for technological innovation, research and development (R&D) investment, and customer focus commitment. By prioritizing quality, customer satisfaction and product differentiation, Huawei has positioned itself as a trusted and innovative brand in the global market.

Access to diverse suppliers. Huawei's global supply chain enables the company to source components, raw materials, and services from various suppliers in different regions. This access to different suppliers helps Huawei acquire the necessary resources to manufacture its products and provide services efficiently.

Cost efficiency. By cooperating with a large supplier network, Huawei can negotiate favorable prices and terms for procuring materials and components. This enables companies to achieve cost efficiencies in their supply chains, increasing their overall profitability.

Scalability and flexibility. Huawei's extensive supply chain enables the company to expand its business and quickly respond to changes in market demand. With a diverse supplier base, Huawei can effectively adjust its production capacity and procurement strategy to meet customer needs.

Technical expertise and innovation. Huawei's supply chain provides access to suppliers who specialize in various components and technologies. By cooperating with these suppliers, Huawei can use its expertise to promote its products' innovation and technological advancement. This enables Huawei to remain competitive in the fast-growing telecommunications industry.

Quality assurance and risk reduction. A well-established supply chain enables Huawei to implement strict quality control measures and effectively manage risks. By working closely with suppliers and implementing a robust supplier qualification process, Huawei can maintain high product quality standards and reduce the possibility of supply disruptions.

Global market layout. Huawei's supply chain spans multiple countries and regions, which promotes its global market layout. By building relationships with global suppliers, Huawei deeply understands local markets, cultural differences, and regulatory requirements. This knowledge and local presence help Huawei tailor its products and services to specific markets, enhancing its competitive advantage.

Supply chain optimization. Huawei continues to optimize its supply chain to improve operational efficiency and reduce costs. Through strategic partnerships, process improvements and supply chain management technologies, Huawei aims to simplify operations, shorten delivery times and improve overall customer satisfaction.

4.2. Case analysis

4.2.1 Idea and Implementation Process

The thought process behind Huawei's supply chain management strategy is rooted in the company's commitment to providing customers with high-quality products and services while maintaining operational excellence. Huawei recognizes that a well-managed supply chain is critical to achieving these goals and gaining a competitive advantage in the global marketplace. The following factors have shaped Huawei's thought process regarding its supply chain management:

Customer-centric approach. Huawei places great emphasis on understanding and meeting customer needs. Companies actively engage with customers to gather insights and understand their requirements. This customer-centric approach enables Huawei to align its supply chain processes with customer expectations, ensuring timely delivery, product quality and excellent customer satisfaction.

Agility and responsiveness. Huawei understands the importance of agility and responsiveness in today's fast-paced business environment. The company seeks to anticipate market trends, demand fluctuations and

emerging technologies, allowing it to adjust its supply chain processes and strategies quickly. By facilitating cooperation with suppliers and implementing a flexible production and distribution network, Huawei can quickly respond to changing market dynamics.

Collaboration and partnership. Huawei believes in building strong collaborative relationships with its suppliers and partners. The company collaborates with its supply chain partners to foster mutual trust, transparency and innovation. Through joint planning, knowledge sharing, and shared risk management, Huawei leverages the expertise and capabilities of its partners to improve its supply chain performance.

4.2.2 Implementation Process

Agility and responsiveness. One of the key factors affecting Huawei's corporate performance is its emphasis on supply chain agility. The rapid pace of technological advancements and changing customer demands require companies to be agile and responsive in their supply chain operations. Huawei has recognized this need and developed a strong and agile supply chain network that adapts to market dynamics and quickly changes customer preferences. Huawei's supply chain agility is reflected in its ability to anticipate market changes and adjust its production and distribution strategies accordingly. By building close relationships with suppliers, Huawei can gather real-time market intelligence to predict demand patterns and adjust supply chain operations accordingly. This agility enables Huawei to reduce time-to-market for new products, quickly respond to changing customer preferences, and seize market opportunities ahead of competitors. In addition, Huawei's agility in supply chain management is also reflected in its production and distribution flexibility. Companies utilize advanced manufacturing techniques such as just-in-time (JIT) and lean manufacturing to optimize production processes and minimize inventory carrying costs. By adopting lean principles, Huawei has eliminated waste, shortened lead times, and improved overall operational efficiency. This enables the company to respond quickly to changes in demand, ensuring that products reach customers promptly.

Cost optimization and operational excellence. Cost optimization and operational excellence are important components of Huawei's supply chain management strategy and contribute significantly to the company's corporate performance. Huawei's commitment to lean manufacturing principles and continuous process improvement enables it to achieve cost efficiencies throughout its supply chain operations. By simplifying the procurement process, Huawei can negotiate favorable terms with suppliers, ensure competitive prices, and optimize procurement strategies. The company emphasizes long-term partnerships with suppliers, focusing on collaboration and co-creation of value. This approach ensures a stable supply of high-quality components and helps Huawei leverage economies of

scale, achieve cost savings, and maintain a cost-competitive advantage.

In addition, Huawei's focus on operational excellence is not limited to procurement but includes production and logistics operations. The company invests in state-of-the-art manufacturing facilities and advanced technologies to improve production efficiency and quality. By optimizing production processes, reducing defects and rework, Huawei has achieved higher levels of productivity and reduced costs.

Logistics management is another important aspect of Huawei's cost optimization strategy. The company leverages its global reach and extensive distribution network to optimize shipping routes, reduce lead times and minimize logistics costs. Huawei's logistics team works closely with carriers and freight forwarders to ensure timely delivery and efficient inventory management. By optimizing logistics operations, Huawei can reduce transportation costs, improve order fulfillment capabilities, and improve customer satisfaction.

Risk management and resilience. In a rapidly changing global landscape, supply chain disruptions can significantly impact a company's performance. Huawei understands the importance of proactive supply chain risk management and has implemented strategies to reduce potential disruptions and ensure business continuity and resilience. Huawei conducts comprehensive risk assessments to identify potential risks and vulnerabilities in its supply chain. These assessments consider many factors, including geopolitical tensions, natural disasters, supplier capabilities and regulatory changes. By understanding and quantifying these risks, Huawei can develop contingency plans and implement mitigation measures to minimize the impact of disruptions. Huawei strategically diversified its supplier base to reduce the risks of single-source reliance. By working with multiple suppliers, the company reduces the risk of disruption due to supplier failure, quality issues or geopolitical tensions. This diversification strategy ensures that Huawei has alternative sources of supply and can quickly shift production or procurement to mitigate potential disruptions.

In addition, Huawei has established a sound supplier qualification and evaluation process. Companies evaluate their suppliers' financial stability, quality management systems, and compliance practices to ensure they meet Huawei's standards and requirements. By working with reputable and reliable suppliers, Huawei reduces the risk of supply chain disruptions due to supplier non-compliance, quality issues, or unethical behavior.

Huawei has invested in information technology systems and data analysis to improve supply chain visibility and real-time monitoring. These systems enable companies to track inventory levels, monitor supplier performance and detect potential risks or

bottlenecks in the supply chain. By leveraging data and analytics, Huawei can proactively identify and resolve supply chain issues, minimizing the impact on its operations and overall corporate performance.

Sustainability and responsible practices. Sustainability and responsible supply chain practices have become increasingly important in business. Customers, investors and regulators increasingly emphasize ethical sourcing, environmental sustainability and fair labor practices. Huawei recognizes these expectations and incorporates the principles of sustainable development into its supply chain management strategy.

Huawei has set strict standards and requirements for its suppliers, emphasizing ethical sourcing, environmental sustainability and labor practices. The company expects its suppliers to adhere to these standards and undergo regular audits to ensure compliance. By setting clear expectations and monitoring supplier performance, Huawei promotes transparency, accountability and responsible practices throughout the supply chain.

The company also works with suppliers to drive sustainability initiatives. Huawei works with its suppliers to reduce environmental impact, improve energy efficiency, and minimize waste generation. The company promotes collaboration and knowledge sharing to identify and implement best practices for sustainable manufacturing and supply chain operations.

In addition, Huawei actively cooperates with stakeholders, including industry associations and non-governmental organizations (NGOs), to promote sustainable development and responsible practices in the technology field. The company participates in industry initiatives, shares best practices, and collaborates on sustainability-focused projects. Through stakeholder cooperation, Huawei is committed to further formulating industry-wide sustainability standards and practices to enhance its reputation and corporate performance.

4.2.3 Actual Results

Access to diverse suppliers. Huawei's global supply chain enables the company to source components, raw materials, and services from various suppliers in different regions. This access to different suppliers helps Huawei acquire the necessary resources to manufacture its products and provide services efficiently.

Cost efficiency. By cooperating with a large supplier network, Huawei can negotiate favorable prices and terms for procuring materials and components. This enables companies to achieve cost efficiencies in their supply chains, increasing their overall profitability.

Scalability and flexibility. Huawei's extensive supply chain enables the company to expand its business and quickly respond to changes in market demand. With a diverse supplier base, Huawei can effectively adjust its

production capacity and procurement strategy to meet customer needs.

Technical expertise and innovation. Huawei's supply chain provides access to suppliers who specialize in various components and technologies. By cooperating with these suppliers, Huawei can use its expertise to promote its products' innovation and technological advancement. This enables Huawei to remain competitive in the fast-growing telecommunications industry.

Quality assurance and risk reduction. A well-established supply chain enables Huawei to implement strict quality control measures and effectively manage risks. By working closely with suppliers and implementing a robust supplier qualification process, Huawei can maintain high product quality standards and reduce the possibility of supply disruptions.

Global market layout. Huawei's supply chain spans multiple countries and regions, which promotes its global market layout. By building relationships with global suppliers, Huawei deeply understands local markets, cultural differences, and regulatory requirements. This knowledge and local presence help Huawei tailor its products and services to specific markets, enhancing its competitive advantage.

Supply chain optimization. Huawei continues to optimize its supply chain to improve operational efficiency and reduce costs. Through strategic partnerships, process improvements and supply chain management technologies, Huawei aims to simplify operations, shorten delivery times and improve overall customer satisfaction.

In the future, Huawei aims to capitalize on the impact of the supply chain to achieve various benefits. This includes expanding its market presence in emerging markets, leveraging infrastructure development and technological advancements to increase demand for its products and services. Huawei's focus on research and development will drive technological leadership, positioning the company as a leader in next-generation technologies like 6G, IoT, AI, and cloud computing. To enhance supply chain resilience, Huawei will diversify its supplier base and implement a robust risk management strategy, ensuring continuity in operations. Emphasizing sustainability and ethical practices will help differentiate Huawei by attracting like-minded suppliers and customers, contributing to its brand image and competitive advantage. Collaborations with industry players, academic institutions, and research organizations will foster knowledge sharing and co-innovation, strengthening the supply chain ecosystem. Leveraging digital technologies such as data analytics, blockchain, and IoT will enable Huawei to optimize operations and enhance decision-making processes. By prioritizing customer-centric solutions and understanding specific industry needs, Huawei will develop customized products and services, nurture strong customer

relationships, and drive value creation throughout the supply chain.

5 Conclusion

Based on a comprehensive analysis of the findings, the study concluded that sustainable supply chain practices positively impacted Huawei's corporate performance. Incorporating sustainability principles into supply chain processes can improve a company's financial performance, operational efficiency, and customer satisfaction. These results highlight the importance of adopting sustainable practices as a strategic imperative for technology companies to pursue long-term success.

Further research in this area could explore the long-term impact of sustainable supply chain practices on Huawei's competitiveness, analyze the role of technology in promoting sustainable supply chain management, and investigate the challenges and barriers to implementing sustainability initiatives globally.

References

1. P. Reklitis, D. Sakas, P. Trivellas, *Sustainability* **16**, 8734 (2021)
2. M. Gonzalez M, M. Dabic, T. Kiessling, *Int. J. Phys. Distrib. Logist. Mgt.* **1**, 159 (2015)
3. J. Roh, P. Hong, H. Min, *Int. J. Prod. Econ.* **147**, 198 (2014)
4. S. Darvazeh, I. Vanani, F. Musolu, *New Trends* **4**, **175** (2020)
5. S. Seuring, M. Müller, *J. Clean. Prod.* **15**, 1710 (2008)
6. E. Koberg, A. Longoni, *J. Clean. Prod.* **207**, 1084 (2019)
7. G. Kumar, M. *Int. J. Prod. Perform. Mgt.* **8**, 1434 (2019)
8. S. Khan, Z. Yu, K. *Bus. Strategy Environ.* **4**, 2022 (2023)
9. Q. Zhang, B. Oo, B. Lim, *J. Clean. Prod.* **210**, 563 (2019)
10. Y. Agyabeng, E. Ahenkorah, E. Afum, *Int. J. Logist. Mgt.* **3**, 549 (2020)