

ADVANTAGES AND CHALLENGES OF DEVELOPING A SUSTAINABLE SUPPLY CHAIN

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Abstract Nowadays, companies are expected to recognize their social responsibilities related to their supply chains. At the same time, it is essential to identify impacts on people and the environment because negative impacts can represent risks for businesses and society in various forms. Supply chains provide opportunities to decrease risks to the environment, and supply chain management can help decrease resource, energy, and transport costs. Companies are actively addressing significant sustainability impacts and risks by introducing sustainable supply chain management. In this paper, the author reviews the literature on the advantages and challenges that companies have to take into account while developing sustainable supply chains.

Keywords:

supply chain, supply chain management, sustainability, environment, advantages, challenges

JEL:

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1 Introduction

As consumers become increasingly aware of the social and environmental impacts of the products they buy, companies are under pressure to adopt more sustainable practices throughout their supply chains (Jo & Kwon, 2022). Sustainable supply chain management (SSCM) is a framework that helps businesses identify and address their supply chains' social, economic, and environmental impacts. SSCM is a holistic approach to managing the social, environmental, and economic impacts of a company's supply chain (Pagel & Wu, 2009; Sarkis et al., 2011). SSCM aims to create a sustainable supply chain that benefits all stakeholders, including suppliers, customers, employees, and the environment. SSCM involves identifying and managing risks and opportunities throughout the supply chain, from raw material sourcing to product disposal. It has become an increasingly important issue for companies as they seek to improve their environmental and social performance while still achieving their economic goals.

Several principles underpin SSCM (Anilkumar & Sridharan, 2019; Balon, 2020):

1. **Transparency:** Companies should be transparent about their supply chains, including the origin of raw materials, the conditions under which products are made, and the environmental impacts of their operations.
2. **Responsible sourcing:** Companies should source materials and products from suppliers who follow ethical and sustainable practices, including fair labor practices, safe working conditions, and environmental responsibility.
3. **Resource efficiency:** Companies should strive to reduce waste and use resources efficiently throughout their supply chains, from raw material extraction to product disposal.
4. **Collaboration:** Companies should work with suppliers, customers, and other stakeholders to identify and address social and environmental risks throughout the supply chain.
5. **Continuous improvement:** Companies should continually monitor and improve their supply chain practices, using metrics and reporting to track progress and identify areas for improvement.

Developing sustainable supply chains can bring numerous advantages, but it has challenges. This paper will explore some of the advantages and challenges of developing sustainable supply chains. The research method used in this paper is the review of literature focusing on the advantages and challenges that companies must consider while developing sustainable supply chains.

2 Advantages of Sustainable Supply Chain Management

Implementing sustainable supply chain management practices requires a concerted effort from all stakeholders in the supply chain. To implement SSCM, companies have to take some steps (Balon, 2020; Dubey et al., 2018; Novitasari & Agustia, 2021):

1. Conduct a sustainability audit of the supply chain to identify risks and opportunities.
2. Set sustainability goals and targets for the supply chain and communicate these goals to all stakeholders.
3. Develop sustainability metrics to track progress and measure performance.
4. Collaborate with suppliers, customers, and other stakeholders to identify and address sustainability risks and opportunities.
5. Use sustainability reporting to communicate progress and achievements to stakeholders.

Completing those steps and adopting sustainable supply chain management practices can benefit companies in several ways (Balon, 2020; Dubey et al., 2018):

1. **Cost savings:** Sustainable practices can reduce waste, increase efficiency, and reduce costs throughout the supply chain.
2. **Reputation:** Adopting sustainable practices can enhance a company's reputation, helping to attract customers and retain employees. Because of networking and digitization, consumers and civil society now find it simpler to track things back to their source. Moreover, communication technology allows for instant access to this information, for instance, through apps. Then, customers are in a position to see a product's place of origin and working conditions. The company can demonstrate to customers, the general public, and politicians that it is conscious of its duties, eager to

actively address critical sustainability consequences and risks, and ready to mitigate them to the greatest extent feasible by implementing SSCM.

3. Risk management: Sustainable practices can help mitigate the risks of supply chain disruptions, environmental disasters, and social unrest.

Directly or indirectly, upstream processes—from primary production to specific production processes to transportation—act as value drivers. This way, careful resource selection and processing to create precursor goods improve product quality. Inhumane working conditions and severe environmental harm brought on by upstream processes, on the other hand, are signs of a risky, unreliable supplier and a lack of quality. Corporations are increasingly held responsible for the societal effects of their upstream operations. Hence, public crises and the resulting reputational damage can hinder economic performance.

4. Innovation: Sustainable practices can drive innovation, helping companies to develop new products and services that meet the needs of a changing market (Novitasari & Agustia, 2021).

Costs of resources, energy, and transportation can be methodically collated with the help of supply chain management. When companies create their processes, such as logistics, more effectively and assist their suppliers in developing or enhancing management processes, these costs can continue to decline. Moreover, more effective systems and processes reduce the need for materials and, consequently, the cost of production. With higher production and fewer accidents, ethical occupational health and safety measures can also result in cost savings. By incorporating sustainability concepts into product creation, innovation potential may be increased. Working with suppliers to resolve these problems can also lead to the discovery of novel approaches to production and transportation.

5. Creating values collectively: According to Umweltbundesamt (2017), social responsibility is partly achieved because of SSCM.

The UN has enhanced the sustainable management approach with the approval of the Sustainable Development Goals (SDGs) in 2015 for the years up to 2030. The SDGs can act as a "compass" for the problems we will face in the future and as a catalyst for innovation. More and more people want to see a better connection between entrepreneurial value creation and societal requirements. Nevertheless, this necessitates collaboration with other firms with comparable supply chains, nongovernmental organizations, and other actors within the company's own supply chain.

3 Challenges of Sustainable Supply Chain Management

As shown in Chapter 2, adopting sustainable practices throughout the supply chain can benefit companies in several ways; however, it is not without its challenges. The most common challenges in developing sustainable supply chains include (Balon, 2020; Prakash et al., 2022):

1. **Lack of Awareness and Commitment:** Developing sustainable supply chains requires a commitment from senior management and engagement across the organization. Many companies lack the awareness and understanding of the importance of sustainability, which can make it challenging to develop and implement sustainable practices. Moreover, sustainability often requires a long-term perspective and investment, which can be challenging for companies focused on short-term goals.
2. **Complex Supply Chains:** Supply chains are often complex and involve numerous stakeholders, making it challenging to identify and address sustainability issues. Moreover, many sustainability issues are interconnected, meaning that actions in one area may have unintended consequences in another. Taking a holistic approach to sustainability is essential, considering the entire supply chain and its impact on the environment, society, and the economy.
3. **Regulatory and Legal Requirements:** Many sustainability issues are subject to regulatory and legal requirements, making it essential for companies to comply with relevant laws and regulations. Compliance can be challenging, particularly in global supply chains, where laws and regulations vary across countries and regions.
4. **Cost Considerations:** Developing sustainable supply chains often requires investment in new technology, processes, and systems. While the benefits of sustainability can be significant, the costs of implementing sustainable practices can be high, particularly in the short term. Companies need to consider the financial implications of sustainability and balance the costs against the benefits.

These days, supply chains are frequently worldwide and comprise intricate networks. There are numerous supply chains due to the wide range of items. Companies should start realistically and move forward gradually. Finding areas with major sustainability benefits is the first milestone. A better understanding of the supply chain,

information sharing with other companies in the sector, and establishing connections with direct and sub-suppliers lead to an increasing number of choices and strategies for optimal sustainable supply chain management over time. Identifying actual and potentially significant effects on people and the environment is crucial. Negative effects might pose dangers for the company in a number of ways, including those involving the law, money, or reputation. It is essential to have precise local knowledge about suppliers and locations in order to assess significant consequences. In actuality, this is hard to come by and expensive. Hence, companies should concentrate on particular countries or leverage already-existing industry information on the effects of sustainability to produce helpful filters (Umweltbundesamt, 2017).

Obstacles may arise while promoting sustainability to suppliers. This is particularly true when there is little chance of influencing the supplier due to factors like low contract volumes, a lack of a direct contractual link, or client requirements. To jointly exert influence, businesses typically select direct exchange with their suppliers, maybe in collaboration with their customers. SSCM must be included in several existing internal procedures to be effective.

This may lead to conflicts with conventional procurement criteria like price, delivery date, and quality. Companies try to resolve these conflicts of interest through open dialogue. The value added by supply chain sustainability should be made explicit. SSCM involves more than just direct suppliers. Typically, companies start by contacting their direct suppliers, with whom they have binding contracts. The materiality analysis frequently demonstrates that the adverse effects start at the sub-supplier level. So, it is crucial to consider how sub-suppliers can be incorporated before taking any action. A code of conduct, for instance, can require suppliers to hold their own suppliers to the same standards.

Nevertheless, companies should refrain from merely shifting the obligations—and corresponding responsibility—to others. Data management must adhere to strict guidelines. Robust data from direct and sub-suppliers are required to be able to identify sustainability implications. However, managing data can be complicated. The data is likely in multiple forms, coming from numerous direct and indirect providers and starting in totally different systems (Chalmeta & Barqueros-Munoz, 2021; Prakash et al., 2022). This data must frequently be manually compiled, which requires expensive personnel. As there is no direct communication with sub-

suppliers, obtaining data from them might also be challenging. Estimating negative effects, particularly those related to emissions or water use, is frequently challenging. Industry-wide initiatives can be helpful here. Also, the materiality analysis should operate as a risk filter to locate areas with significant sustainability impacts.

4 Conclusion

Sustainable supply chain management is a framework that helps companies identify and address their supply chains' social, environmental, and economic impacts. Adopting sustainable practices throughout the supply chain can benefit companies in several ways, including cost savings, enhanced brand reputation, risk management, increased innovation, and improved supplier relationships. However, it has its challenges. Companies need to overcome issues such as lack of awareness and commitment, the complexity of supply chains, regulatory and legal requirements, and cost considerations to develop sustainable supply chains. Nevertheless, companies can improve their social and environmental performance by developing sustainable supply chains while still achieving their economic goals.

Implementing sustainable supply chain management practices requires a concerted effort from all stakeholders in the supply chain, including suppliers, customers, and employees. By adopting sustainable practices throughout their supply chains, companies can create value for all stakeholders and contribute to a more sustainable future.

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