

Sustainable Supply Chain Management (SSCM) As A Concept and Its Implementation

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Abstract: This research aims to explain the role of the sustainability function of supply chain management in the manufacturing, trade and service industries using academic literature so that supply chain management users can explain and apply the SCM concept efficiently and effectively. This research uses secondary data collected indirectly on the objects studied from various sources, from individuals, print and electronic media as well as companies that have implemented SCM. This object data is then processed, classified, analyzed and summarized to form a narrative and conclusions. Based on the results of the literature review, it can be explained that: (1). Supply chain management is often referred to as SCM. SCM is a very important field in the business world because it is directly connected to the company's competitiveness; (2). SCM can be applied to both manufacturing, trading and service companies; (3). Supply Chain Management in a company will provide benefits, namely increasing customer satisfaction, increasing income, reducing costs, higher asset utilization, increasing profits, and making the company bigger.

I. Introduction

In recent years, corporate supply chain sustainability has emerged as an issue for competitive advantage in the constantly changing global environment. The term sustainability has also been institutionalized in most community structures, and the issue has been Suggested by governments, universities and educational institutions, commercial organizations, cooperatives, corporate supply chains and local/global organizations.

The transition towards the adoption of Industry 4.0 technologies is essential for supply chains to survive in dynamic and hypercompetitive environments (Ghadge et al., 2020). In digital transition, traditional and emerging information technology (IT) are used together to obtain the advantages that they provide, thanks to internet technologies and the connectivity that these technologies enable (Ghobakhloo, 2018, 2019). Many Industries 4.0 technologies are nascent (Núñez-Merino et al., 2020; Oliveira-Dias et al., 2022a), so the effects of their use are still unclear. This is why companies that venture to use these emerging technologies – big data, cloud computing, the Internet of Things (IoT), artificial intelligence (AI) and virtual and augmented reality (VR and AR), among others – in their supply chains do so for exploration. The adoption of these emerging technologies is not an “all or nothing” matter. On the contrary, companies present different degrees of implementation of such technologies in their supply chains as they are exploring these novel technologies. Taken all the above together, digital transition involves the exploration of emerging technologies and the exploitation of existing mature technologies.

Along these lines, the literature has highlighted the pertinence of applying the theoretical lens of inter-organisational ambidexterity to advance Industry 4.0 and supply chain management (SCM) development (Hofmann et al., 2019). The assumption is that under ambidexterity firms capable of managing both exploratory and exploitative activities will be the most successful (Tushman and O'Reilly, 1996).

Supply Chain Management (SCM) is currently a very important field in the business world because the supply chain function is directly related to the company's competitiveness. In the last two decades awareness of the importance of SCM in various companies has become increasingly visible. The indication is that many companies are creating new positions such as Supply Chain Analyst, Supply Chain Manager, Supply Chain Director or other position names such as Logistics Manager, Distribution Manager, etc. With the development of today's digital world, Supply Chain

Management practices have also changed a lot. Companies that want to win in competition must prepare professional staff who are able to understand how to manage supply chains in today's digital era.

Supply chain management is often referred to as SCM. SCM is a very important field in the business world because it is directly connected to a company's competitiveness. In the last two decades, more and more companies have become aware of the importance of SCM, so many have implemented it. SCM itself is the management and supervision of the cycle chain starting from materials or raw goods, payments, information from suppliers to producers, checking wholesalers to consumers.

II. Literature Review

Datar and Rajan (2021: 24) said, the parts of the value chain associated with producing and delivering a product or service—production and distribution—are referred to as the supply chain. The supply chain describes the flow of goods, services, and information from the initial sources of materials and services to the delivery of products to consumers, regardless of whether those activities occur in one organization or in multiple organizations.

Let's say, Datar and Rajan (2021: 23) describe too, the value chain is the sequence of business functions by which a product (including a service) is made progressively more useful to customers. The six primary business functions: research and development, design of products and processes, production, marketing, distribution, and customer service. We illustrate these business functions with Sony Corporation's television division.

1. Research and development (R&D)—generating and experimenting with ideas related to new products, services, or processes. At Sony, this function includes research on alternative television signal transmission and on the picture quality of different shapes and thicknesses of television screens.
2. Design of products and processes—detailed planning, engineering, and testing of products and processes. Design at Sony includes deciding on the component parts in a television set and determining the effect alternative product designs will have on the set's quality and manufacturing costs. Some representations of the value chain collectively refer to the first two steps as technology development.²
3. Production—procuring, transporting, and storing (“inbound logistics”) and coordinating and assembling (“operations”) resources to produce a product or deliver a service. The production of a Sony television set includes the procurement and assembly of the electronic parts, the screen and the packaging used for shipping.
4. Marketing (including sales)—promoting and selling products or services to customers or prospective customers. Sony markets its televisions at tradeshows, via advertisements in newspapers and magazines, on the Internet, and through its sales force.
5. Distribution—processing orders and shipping products or delivering services to customers (“outbound logistics”). Distribution for Sony includes shipping to retail outlets, catalog vendors, direct sales via the Internet, and other channels through which customers purchase new televisions.
6. Customer service—providing after-sales service to customers. Sony provides customer service on its televisions in the form of customer-help telephone lines, support on the Internet, and warranty repair work.

World Bank (2023:2) The Bank's Procurement Regulations define the Procurement Process as: *“The process that starts with the identification of a need and continues through planning, preparation of specifications/ requirements, budget considerations, selection, contract award, and contract management. It ends on the last day of the warranty period.”* In other words is the number of Organizations involved can increase quite quickly as one moves higher up (i.e., from first-tier to fourth-tier suppliers) in the supply chain management. SCM refers to the coordination of activities needed to provide a final product or service. These activities start with the raw materials and end with the delivery of the final product or service to the end customer. Understanding and managing the supply chain is important for Borrowers procuring goods from Manufacturers that rely on input materials from other Suppliers. In other words, the Manufacturer the Borrower interacts with may in turn rely on several other Suppliers that enable them to manufacture the final output. SCM is not only important in a manufacturing context. It is, for example, important that the Borrower awarding a contract to an infrastructure Contractor also understands this full chain of events.

A supply chain as a sequence of (decision making and execution) processes and (material, information and money) flows that aim to meet final customer requirements and take place within and between different supply chain stages. Then, SCM is the integrated planning, co-ordination and control of all business processes¹ and activities in the

supply chain to deliver superior consumer value at less cost to the supply chain as a whole whilst satisfying requirements of other stakeholders in the supply chain, e.g. government and NGO's (Van der Vorst, 2004). The consumers and retailers have become much more demanding and product-life cycles have shortened significantly in all kind of sectors (e.g. computers, food, automotive). In today's marketplace the keys to long-term competitive advantage are flexibility and customer response. This has resulted in functional products becoming innovative products. The problem is that the supply chains that produce those innovative products are still efficient. By the way, Van der Vorst to show in figure 1.

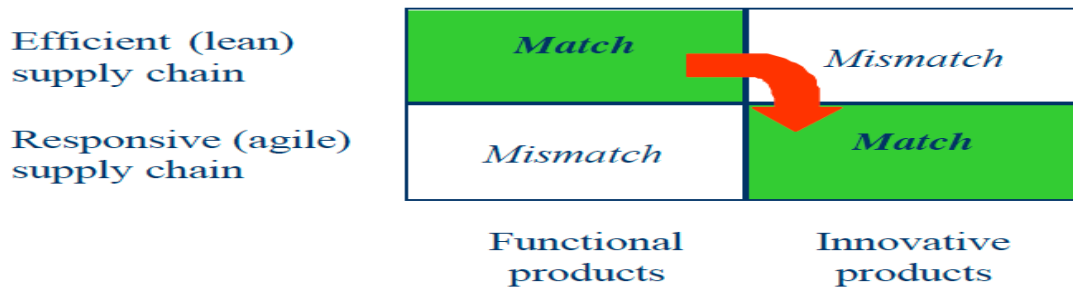


Figure 1: Supply chain design in relationship with the nature of product demand

There are several SCM functions that are important to pay attention to. The first function is physical SCM where the function of SCM is to convert raw materials into finished products that can be delivered to final consumers. The main function of supply chain management is to relate to various physical costs in the form of material costs, storage costs, special production costs, transportation costs, and so on. The next function is SCM as market mediation and ensuring that it has been supplied by the supply chain. The final function is related to the costs of market surveys, product planning, and various kinds of costs that can arise due to consumer aspirations not being met by the products provided by the supply chain.

Therefore, there are two strategies you can use to build a good SCM. The first is to build relationships with suppliers. It is very important to build good partnerships with these suppliers to realize supply chain success. A good company will limit the number of suppliers where only suppliers who have advantages can be collaborated with. The final strategy is to improve customer response to remain competitive, then focus on the supply chain to improve customer service. One way to improve customer service is to increase the frequency of faster product deliveries where customers will be satisfied with the timeliness. That's some interesting information about supply chain management that is important for you to know, I hope this information is useful.

Supply chain management is an important part of a business company. This SCM will support consumer fulfillment in manufacturing, retail and wholesale businesses, so it can be said that this SCM determines the success of these businesses. The supply chain in each business is different. The most basic supply chain includes the company itself, suppliers, and also the company's customers. For larger companies the scope of the supply chain will be broader. Supply Chain Management itself is an activity of planning, controlling and running product flows. This supply chain includes the process of obtaining raw materials, the production process, up to the distribution of products to final consumers so that this method will be more efficient and save costs. SCM is a broad and more complex business where it depends on partners, suppliers, manufacturers, and so on, where it is hoped that every supply chain process can run well and smoothly.

As smart supply chain consolidates the use of base technologies to improve relationships, companies are using base technologies to collect and analyze data that could create new opportunities for data management and integration towards sustainability (Frank et al., 2019; (Wilhelm and Villena, 2021). In addition, front-end technologies can enhance green relationships with suppliers because companies can use these technologies to better select green supplies. On the other hand, green operations could enhance companies' performance when driving digital transformation in their supply chains. Providing information using digital platforms with suppliers can help companies develop green digital purchasing, offering new reliable, accurate information about the suppliers and explaining how they implement green practices into their supply chain (Birkel and Müller, 2020; Narayanamurthy and Tortorella, 2021).

Furthermore, to deliver the products to eco-friendly customers, companies seek to create new green packages, using as few materials as possible, which can be supported by sensors connected via the Internet of Things(IoT), to

enhance such packaging solutions (Birkel and Müller, 2020; Kumar et al., 2021; Narayanamurthy and Tortorella, 2021). The digital transformation strategy can create new business models that provide a new green perspective for the companies to use the generated data toward a strategic position as a green performer in the market (Birkel and Müller, 2020; Hohn and Durach, 2021). Furthermore, besides the digital strategy, base technologies are crucial for green performance because cutting-edge technologies like IoT, cloud, big data and artificial intelligence (AI) facilitate companies' data flow and management.

III. Method

This research uses secondary data collected indirectly on the objects studied from various sources, from individuals, print and electronic media as well as companies that have implemented SCM. This object data is then processed, classified, analyzed and summarized to form a narrative and conclusions.

Discussion and Summary

Disruption and uncertainty continue to reshape almost every supply chain. Companies are looking not only to build resilience in supply chain operations but also leverage their supply chains as strategic assets that can deliver long-term business growth. An efficient and effective supply chain management strategy has the potential to reduce costs, improve inventory management, enhance customer service and help meet changing market demands. However, organisations require skilled supply chain leaders to navigate the complexities of the modern supply chain landscape and identify areas where value can be created.

To achieve this, there are several types of supply chain management that a company may implement, including:

1. Upstream supply chain. Upstream supply chain is the positioning of manufacturing companies as liaisons or distributors to consumers or resellers who market products. So, the company's product procurement process is the main activity in this upstream section.
2. Internal supply chain. Second, the internal supply chain, namely the process of inputting raw materials to the warehouse which are then converted into basic materials. Then, the basic materials are distributed by the company. This is done continuously by the company to be able to produce quality production output. In internal supply chain management, the main activities consist of production management, manufacturing, and product inventory control carried out by the company.
3. Downstream supply chain. Meanwhile, in the downstream supply chain, supply chain management carries out activities consisting of all marketing activities for the company's products, including sending products to customers or consumers. In other words, the main activities in this third type of supply chain are managing distribution direction, warehousing systematics, transportation, and the final activity of product delivery services.

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Supply Chain Management itself is an activity of planning, controlling and running product flows. This supply chain includes the process of obtaining raw materials, the production process, up to the distribution of products to final consumers so that this method will be more efficient and save costs. SCM is a broad and more complex business where it depends on partners, suppliers, manufacturers, and so on, where it is hoped that every supply chain process can run well and smoothly.

Why is SCM Important? The business world today has increasingly tight business competition so that those who cannot compete well will be left behind by their competitors. This business is part of the global economy so the consequence is that the development of the business world will be characterized by changes that are increasingly open, complex and competitive both in the company's internal environment and in the external environment. These changes are what causes socio-economics to create obstacles and challenges that must be faced. In the midst of increasingly tight business competition, the key to success in improving company performance lies in the company's ability to work together with its business partners.

In general, the application of the Supply Chain Management concept in a company will provide benefits, namely (Jebarus, 2001) customer satisfaction, increased income, reduced costs, higher asset utilization, increased profits, and a larger company:

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1. Customer satisfaction. Consumers or product users are the main targets of the production process activities for each product produced by the company. The consumers or users referred to in this context are of course consumers who are loyal for a long period of time. To make consumers loyal, consumers must first be satisfied with the service provided by the company.
2. Increase income. The more consumers who are loyal and become company partners means it will also increase the company's income, so that the products produced by the company will not be 'wasted', because consumers are interested in them.
3. Reduced costs. Integrating the flow of products from the company to the final consumer also means reducing costs in the distribution channel.
4. Asset utilization is getting higher. Assets, especially human factors, will be increasingly trained and skilled both in terms of knowledge and skills. Human power will be able to empower the use of high technology as required in the implementation of Supply Chain Management.
5. Increased profits. By increasing the number of loyal consumers who become product users, this will in turn increase company profits.
6. Companies are getting bigger. Companies that benefit from the distribution process of their products will gradually become bigger and grow stronger.

Supply chain management is a strategic approach to managing a supply chain or series of activities related to producing and distributing products or services to customers. The supply chain involves all elements involved in producing a product or service, starting from planning, procurement of raw materials, production, distribution, and delivery to customers. Therefore, supply chain management includes managing resources, information, and activities throughout the supply chain to improve the efficiency, effectiveness, and overall performance of the supply chain. Companies as producers of products and services can reduce and cut the time required to deliver products and services to end users, as explained in Figure 2 below.



Figure 2: Supply chain design in relationship with the Port/Harbor and Producers

Supply chain professional and business leaders realize that they need to become more flexible, collaborative, and resilient. The supply chain's underlying architecture will have changed, and operations will no longer be the same. To become more agile and robust, processes will need to be digitally enabled from start to finish.

This need for performance improvement and sustainability achievement in organizations has been developed through sustainable supply chains (SSC), which involve business processes such as the procurement of materials, assembly and production, storage and distribution of products, customer service, and three dimensions approach (economic, social and environmental).

IV. Conclusions

1. Build your understanding of modern supply chain management practice and learn about the various drivers and capabilities needed to build a resilient supply chain.
2. Supply chain visibility is a critical success factor for achieving supply chain excellence, allowing businesses to communicate, solve problem, and provide service to partners and customers along the entire chain of events.

3. Sustainability of supply chain management (SSCM) will be improved and created with in value chain analysis (VCA) because that are can cost reduction (CR), generating operating income (GOI) and increase customers satisfactions (ICS).
4. Besides the digital strategy, base technologies are crucial for green performance because cutting edge technologies like IoT, cloud, big data and artificial intelligence (AI) facilitate companies' data flow and management, justify for implemented.

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