

Introduction  
preservation efforts at  
the business level  
with



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## **Introduction**

The impact of environmental challenges is having a toll on the living conditions of the world's population. This has brought about the increase in the degree of attention on environmental, related issues. The general public has begun to be more attentive to latent effects of this worldwide surroundings crisis; some of the most vital environmental problems are ozone layer depletion, global warming, and hazardous wastes (Cetinkaya 11). In an effort to mitigate the negative effects of these environmental problems, many countries have laws and regulations together with environmental standards intended to reduce industry carbon and greenhouse gas emissions to the atmosphere (Emmett and Sood 18).

Some of these standards include restriction of hazardous substances (RoHS), as well as registration and evaluation of substances, and authorization

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together with restriction of chemicals (REACH). This report examines the environmental preservation efforts at the business level with a particular emphasis on the basics of green supply management. Supply chain management covers industry planning and control activity related to trade, exchange, and logistics management; more prominently, it involves a partnership among suppliers, agents and novel customers.

With growing customer consciousness and more severe regulations, industries have begun to integrate environmental factors throughout theory organizations (Wisner 15). Furthermore, industries have been gradually shifting toward eco-friendly supply chains by incorporating green technologies into their designing of products and distribution processes. These efforts, together with the aspiration to integrate comprehensive production responsibility (EPR), have led to the development of green supply chain management (GCSM) (Wang and Gupta 12). Green supply chain management is the recognition of the uneven environmental effect of supply chain processes in a business. GSCM can be traced back in the late 1969 when the Coca-Cola Company was commissioning a research on life-cycle analysis for evaluating the environmental effects of its product packaging, laying the structure for the LCA, that is practiced today (Wimmer 15). During this period, LCA stressed the reduction of undesirable environmental effects from production, transportation, as well as disposal of goods.

On the other hand, progression in recent years has gradually transformed and integrated this methodology into the entire supply chain management system (Cetinkaya 18).

## **Evolution of GSCM from SCM**

Supply chain management was first surfaced in 1980s when it was discussed by a team of professional consultants. This discussion and later progresses, enlightened people on the concept of supply chain management; SCM is acknowledged as a system of interrelated businesses that create a tight connection among raw material resources, production, transportation, as well as distribution of resources, financial flows for the crucial provision of goods and services, and information (Emmett and Sood 23). As a result, the Global Supply Chain Forum of 1999 defined SCM as an integration of procedures from suppliers to customers to offer products, services and information in order to put together customers' values and the related functions. consequently, the SCM complexity involves three factors: suppliers, products, and raw materials (Wisner 25). Regarding sustainability and the global green initiatives, emphasis is laid on the three key issues: dematerialization, detoxification, and de-carbonization. This lead to the 4R's (reduction, re-design, reuse, and remanufacture) in practice (Wang and Gupta 32). Most industries endeavor for dematerialization in order to decrease the quantity of materials or time required to make and deliver products and services required by the customers.

The production of poisonous materials can be the best examples of people who endure from their own actions since they overlook the latent international impacts of systems of oil spills or spills of other poisonous material (Emmett and Sood 33). One of the most pressing environmental needs is the detoxification of industrial pollutants; much of the natural resources around the globe have been polluted by industrial waste and

pollutants caused by the utilization of hazardous materials found in industrial products. Its effect on the environment threatens the living conditions of all organisms (Cetinkaya 29), and in this context, detoxification becomes a more significant challenge to governments, industries and individuals. Also, carbon emissions from hydrogen production in the production of power from fossil fuels emit greenhouse gases in the atmosphere, and this leads to the issue of climate change. Hence, de-carbonization, also known as de-energization, is necessary to mitigate this problem. To achieve these goals, product redesign in order to ensure reduction in energy consumption, thus easing reassembly for manufacturing and reuse (Cetinkaya 34). Given the global green initiatives, novel means have cropped up for adopting methods and standards used in the analysis of sustainable development, in major enterprises, in developed countries (Wang and Gupta 376).

These methods focus on three most important aspects of the enterprise namely product plan, production method, and the organization (Wimmer 40). These recommendations have led to green productivity to prevail in Asia. The fundamental goal of green productivity is to develop higher-level production processes to protect society while simultaneously increasing industry product qualities and maintaining profit targets (Emmett and Sood 35). Therefore, green productivity focus is on encouraging productivity as well as environmental performance for developments that are sustainable in industry in order to attain a competitive advantage. This is aimed at decreasing environmental impact in the value chain; this is from raw materials up to final products, this reduces energy use, utilization of natural resources, as well as pollution-related problems (Cetinkaya 42).

To that end, green supply chain management should increase the actions of reverse logistic management to integrate all aspects of environmental management into its domain (Wisner 46). Green supply chain management is grounded on the product life cycle. Life cycle analysis evaluates different factors of the product system, entailing technology and its latent effect to the environment, in the complete life cycle. It involves examining all stages of product or service development, from the selection of raw materials, throughout product outputs and usage, to product processing use (Emmett and Sood 59). The most widespread instrument used in life-cycle assessment (LCA), which is used to aid designers at the start of product design to make out techniques that guarantee that the product parts and designs are familiar to environmental standards. Standards must be laid down when performing LCA of the quantity of energy and natural resources used, the total emissions through the air and water pollution, together with the waste products following the use of the product output (Wimmer 56). Although the theory of GSCM came up in the 1990s due to many shortcomings, many industries did not adopt green production until 2000 or even later. Industries relied on the traditional supply chain that is different from the green supply chain.

In the traditional supply chain, the flow of materials and information is linear and from one end to the other (Emmett and Sood 51). There is a limited collaboration and visibility, where each supply-chain partner has limited information regarding greenhouse gas emissions and the carbon footprint other partners (Wang and Gupta 76). A carbon foot print measures the impact of the activities in a supply chain in the environment, and, in

essence, climate change; this relates to the greenhouse gases emanating from the burning fossil fuels for electricity, heating and transportation purpose. A carbon footprint can be divided into two; primary and secondary footprints. Primary footprint has a direct relationship with the activity in a supply chain, whereas the secondary footprint is related to the products and services supplied, and are, therefore, influenced by a number of factors such as customer behavior, trends and marketing (Cetinkaya 52). When calculating the carbon footprint of a supply chain, it is crucial to quantify as many emission sources as possible to provide a total portrait of the supply chain effect. In order to produce a dependable footprint, it is essential to pursue structured process, and categorize all sources of emissions (Wang and Gupta 53). Therefore, every player maybe apprehensive about his footprint, and try to decrease this, regardless of the impact on supply chain in both upstream and downstream.

Sometimes, focus can be on end-to-end supply chain costs, however, because of problems with information sharing, costs are far forming optimized in most cases (Emmett and Sood 54). On the contrary, Green Supply Chains reflect on the environmental impact of processes of supply chain from the origin of raw materials to the last disposal of goods. Inside the green supply chain, every player encourages other to go Green and give necessary information, guidance as well as support; for instance, through suppliers' development programs or customer support (Wimmer 56). Environmental objectives and performance measurement are then incorporated with monetary and operational objectives. With this incorporation, the Green Supply Chains strive to achieve what an

organization could not possibly achieve: minimized wastes minimized environmental impacts while assuring maximized consumer satisfaction, and healthy profits (Cetinkaya 63).

## **Types of stakeholder groups involved in GSCM**

There exist five categories of environmental stakeholder groups who make Green initiatives within an organization. These include regulatory stakeholders who set regulations or influence governments to set standards. Another group consists of consumers who seek emotional resonance together with the cost, and expediency factors of when and where they buy a specific product (Cetinkaya 71).

The third driver of green supply chain is organization stakeholders. These are directly related to the organization, and this can have a financial impact on the same organization. The other drivers are environmental organizations, community groups environmental, as well as all other potential lobbies, mobilizing public views in favor of, or against, an organization's policies.

The last stakeholder is the media, which have the ability to influence society's perceptions (Wang and Gupta 57). When considering the role of every player in the chain, different incentives are used to migrate towards green supply chains. To begin with manufacturers, there a number of factors that drive them towards green design and green production (Cetinkaya 59). These include legislation, corporate customer requirements, competitor standards, voluntary agreements, or for purposes of maximizing product understandings. Suppliers are driven towards environmental conscience by



factors such as customer requirements, consumers, legislation, and consumer organizations. (Emmett and Sood 64).

## **Steps in the implementation of GSCM**

The four main steps in the implementation of green supply chain. These include identification of costs, determination of opportunities, calculation of benefits, and decision, implementation and monitoring (Wisner 69). In the identification of costs, it is important to conduct a methodical review of the facility or process in order to determine if and where important environmental costs occur. This step can range from the examination of specific product or process to the whole organization. In doing so, organizations need to consider whether there are major material losses occasioned by spills or other material handling problems (Cetinkaya 67). In addition, businesses may consider whether there are any reasonable quantities of materials disposed due to quality, obsolescence, or inventory issues.

This process of analyzing the cost structure should be reexamined to identify the product or process that has major costs. Furthermore, material tracking is an evaluation of what, why, how much and where the material is used, integrated into products and related products, put in waste streams, and can aid to identify those costs (Wimmer 69). The second step is that of determining opportunities. Once an organization has finished the first step of identification, the next stage entails determination of areas that give the better opportunity for improvement and then develop definite remedy that reduce costs and negative effects. Once a set of high-priority alternatives has been developed, the third step, is the process of analyzing the costs and <https://assignbuster.com/introduction-preservation-efforts-at-the-business-level-with/>

gains of the different options. This can be achieved through conducting quantitative evaluations. These rely mainly on experimental data (Wang and Gupta 70). The other approach is to conduct qualitative evaluations.

These mostly rely on observation and judgment. The suggested paradigm is to calculate costs where appropriate, and then mark qualitatively the value of other costs informing the decision-making process. When the environmental and financial upgrading have been estimated, the fourth step involves making the decision, implementing the changes, as well as monitoring the progress of the implantation process (Cetinkaya 72).

## **Benefits of GSCM**

Organizations enjoy benefits through greening their supply chain; green supply chain management impacts positively in terms of financial performance (Emmett and Sood 73).

Some of the factors responsible for persistence of this myth are inertia, the lack of a systematic approach, and the unwillingness to engage in sustained and changed thinking that is necessary to create a Green Supply Chain.

However, the most fundamental benefit of green supply chains is a positive long-term impact on the financial performance of the organization (Emmett and Sood 85). Another benefit of GSCM is sustainability of resources. Green supply chains support the successful utilization of all of the accessible productive resources of organizations. By including green supply chain management, thinking through their whole business decision-making process, organizations may now buy Green input resources that will flow

through an environmentally friendly production process to produce green inputs (Wang and Gupta 69).

Lowered costs and increased efficiency are another benefit of GSCM. At the core of GSCM is the principle of decreasing waste through an increase of efficiencies. In addition, effective resources management and supply can reduce production costs, promote recycling and reuse of raw materials. Furthermore, the production of hazardous substances can be reduced, hence curbing businesses from facing fines due to violation of environmental laws. Consequently, the pertinent operational costs are significantly reduced while efficiency of resources use is improved (Wisner 98). GSCM aids in the differentiation of a product.

It also helps in making an organization more competitive. Besides attracting new, profitable customers for organizations, it also gives a competitive edge in the market place (Emmett and Sood 79). It also make the brand image strong, and improve the reputation in the market place. Another benefit of GSCM is that, it results to enhanced quality of services and products. Besides the above six benefits, there are additional advantages that can be generated by GSCM (Wisner 97). These include effective management of suppliers, dissemination of technology, advanced techniques, capital, and knowledge among supply chain partners. Others include transparency of the supply chain; better control of product safety and quality' increased sales and revenue; as well as beneficial uses of waste.

Although it is widely believed that engaging in green supply chain management is not cost effective, the above benefits reaped from the

process demystify this myth. In business milieu, a number of organizations have been witnessing to this. For instance, Texas instruments save close to \$ 8 million per annum by the reduction of its transit packaging budget for its semiconductor business via source reduction, recycling, and reusable packaging systems (Wimmer 75).

This represented a 20 percent in its annual savings. Another organization that reaped the benefits of implementing GSCM is Commonwealth Edison. The company produced \$ 50 million in financial benefits from management of materials and equipment with a life-cycle management approach.

Pepsi-Cola also saved \$ 44 million by changing from corrugated to reusable shipping containers for one liter and 20-ounce bottles. As a result, the company was able to conserve 196 million pounds of corrugated material (Emmett and Sood 84).

## **Challenges of implementing GSCM**

Despite benefits of implementing GSCM, the process is harbored by a number of barriers. The first obstacle of the implementation process is a lack of IT implementation. The information technology contributes by providing strong support to supply chain processes; this ensures supply chain improvement.

An efficient IT system is important for supporting the GSCM during the different phases of the product life cycle (Wimmer 86). It is, therefore, important that the product development programs incorporates designs as this ensures reuse and environmental recovery. In addition, IT enhances reduction of paper usage, which is among the pillars of GSCM. As such, lack  
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of IT implementation will adversely affect the implementation of effective GSCM (Cetinkaya 95). However, there exists obstacles to GSCM implementation due to opposition to technology advancement adoption. Technological advancement is feasible, if there is high transferability. If the stakeholders are not willing to adopt the changes that come with innovation and technology, this poses an obstacle to the implementation process of GSCM.

Another barrier is the lack of organization encouragement. If the organization does not motivate employees towards GSCM, this may demoralize them, hence, inhibiting the implementation process. The same case applies if the top management of the organization is not committed to green practices (Wang and Gupta 146).

## **Conclusion**

In conclusion, as environmental protection continues to be embraced globally, organizations are paying more attention to ensuring that green standards are adhered to at all levels of the supply chain, from the sourcing of raw materials through manufacturing, social welfare, to sustainability of the product development system. The green supply chain framework is built based on future trends and environmental requirements for a sustainable design. If companies adhere to these guidelines, they are headed to a future full of hope.

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