

# Race To Equilibrium: A Detail Study on Impact of Green Supply Chain Management on Environment By Using Qualitative Research Method

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**Abstract:** As we all know that supply chain management involves movement and storage of raw materials as well as finished goods from manufacturers to suppliers. Here traditional manufacturing industries develop the reputation between human beings and environment is becoming more and more serious. So looking at increasing concerns for environment in today's era, Green Supply Chain Management has appeared as an environmental uniqueness which combines environmental fears into supply chain management. As this new concept gives an idea of creating sustainable supply chain management. Green Supply Chain Management involves some of the important activities such as green manufacturing, green operations and green design. Thus Green Supply Chain Management has appeared as a new perspective for an organizations to achieve profit objective by reducing environmental risk and its impact.

## I. Introduction

As people are getting more aware of environmental problems as well as global warming, so due to this people tend to ask more questions about the products which they would like to purchase. Companies will have to answer the questions which raised by consumers about how green is their production of merchandise process and supply chain are, their industrial pollution and how they recycle it. It has become increasingly important for any organization facing community and regulatory pressures to maintain balance between methodology used by organization to produce product and its impact on environment. Therefore, in order to solve environmental issues, it is necessary for all companies to work closely together to improve environmental outcome. Green Supply chain Management has appeared as an important and innovative approach for an every organization to achieve profit and also aim of achieving market share by reducing environmental risk and impact. Green supply chain Management aims to reduce or eliminate wastages including risky chemicals, energy and solid waste along with supply chain such as manufacturing process, supply of final product, distributors, wholesalers, and retailers. Companies that implement Green Supply Chain Management practices considered as cost saving (reduced energy, raw material requirements) which leads to reduction in environmental responsibility. The purpose of this topic is to understand the importance of Green supply chain Management and its impact on environment by using qualitative research methodology through which we will be able to arrive at conclusion about the usage of this type of supply chain management in currently running organizations.

## II. Green Supply Chain Management

Green Supply Chain Management is all about delivering products and services from suppliers, manufacturers to end customers through material flow, information flow and cash flow in the context of environment. Traditional Supply Chain Management focuses on Total Quality, optimum Cost and best service which in some way contributed to environment.

Today's Green Supply chain management mandates to incorporate the environmental idea in each and every stage of the product and service in a Supply Chain. Hence Supply chain managers have a great role in developing innovative environmental technologies to tackle the problems faced by the economy on environmental problems and communicate this to every stake holder in the chain. Lean Manufacturing is eliminating waste in every stage of supply chain. It focuses on producing economically and environmentally friendly quality products which meets the customer expectation. It is the best practice to be followed since it reduces inventory, saves space and energy. Hence Lean manufacturing contributes to the Green environment. EPI is to measure the effectiveness of environmental performances of a country. This measure provides the details on how close the countries can establish.

The following are some of the central concepts associated with Green Supply Chain Management:

1.Green purchasing and procurement, which involves the selection and acquisition of products and services to minimize any negative impacts over product lifecycles associated with manufacturing, transportation, usage, and recycling. In many countries, governments, industries, and civil society organizations work collaboratively to purchase eco-friendly products.

2.Green manufacturing, which uses production processes that have relatively low environmental impacts, are highly efficient, and generate little waste or pollution. Green manufacturing can lead to lower raw material costs, production efficiency gains, reduced environmental and occupational safety expenses, and an improved corporate image.

3.Green distribution, which relates to packaging and logistics. Packaging characteristics (such as size, shape, and the materials used) have an impact on distribution and transportation. Better packaging—together with rearranged loading patterns—can mean a reduction in the quantity of materials used, better use of space, and less need for handling.

4.E-waste, which is waste associated with used electronic devices and household appliances no longer fit for their original purpose and, therefore, destined for recovery, recycling or disposal. E-waste includes a wide range of electrical and electronic devices such as computers, cellular phones, portable audio equipment, refrigerators, and air conditioners.

### III. Ways To Build Green Supply Chain

- **Product Selection:** Designing the product in such a way that it should be safe for use, creating least pollution and consumes less energy. It should not be hazardous during storage, transportation and also while disposing once it reaches end of its product life cycle. DFE (Design for Environment) is about developing products that has no negative side effect for human and environment, cost effective and environment friendly. This practice has to be implemented in product design stage.
- **Process and production:** Process has to be designed so that it conforms to the Green Supply Chain Management initiatives to reduce environmental negative impact. Efficient and effective production strategy to reduce energy consumption which includes reducing waste material, air and water emissions. This contributes to lean manufacturing. All possibilities have to be checked for recycling the Scrap materials.
- **Business Partners selection:** Selecting suppliers who have proven track records on practicing lean manufacturing and using environment friendly material. Involving vendors during product conception and

design so that they can share their best practices to best align your strategy with the customer strategy on going greener supply chain. Ultimately it results in customer delight and satisfaction.

- Logistics Design: Efforts should be practiced to reduce fuel consumption. This we can achieve by setting up suppliers near to the OEMs (Original Equipment Manufacturers) and its Hubs. Less use of air freight, increased use of rail and sea transport. Logistics partners have to be included while product designs so that it improves cubic space utilization and effective fleet management. Back hauling should be practiced where the empty vehicle should be used to collect the goods from other sources once after delivering finished goods.
- Packaging Material: Replacing package materials which are eco-friendly. Fumigation certificate should be obtained for international shipments for wooden pallets and crates. Packaging material has to be designed in such a way it can be re-used and re-cycled. Packaging should be robust so that any hazardous material inside it doesn't spill over and cause environmental hazard.
- Reverse logistics Design: Materials after consuming should be effectively used for re-use, repair, recycle, remanufacture and redistribution. It calls for reusing containers and pallets, redesigning and recycling package materials etc. Reducing pollution during transportation are important activities of reverse logistics. Proper design of Reverse logistics contributes greater towards Green Supply Chain Management.
- Information Technology: A Green approach to IT has to be achieved through various automatic processes thereby reducing carbon foot prints. Paper usage has to be minimized through automatic invoice/payment processing. Using EDI for creating/transmitting orders.
- Green Building: Deploying greener practices in Design, construction and maintaining the buildings. Using energy efficient bulbs, natural lightning saves considerable energy. Water has to be recycled for day to day use. LEED certification (Leadership in Energy and Environmental design recognized by US and other countries) has to be obtained. Investment in Renewable energy sources such as solar, wind etc. are needed for sustainable green practice.



#### IV. Benefits of Green Supply Chain Management



• Fig. Benefits of GSCM

- Qualitative Benefits
  - Improved working condition
  - Better organization in public
  - Improved staff morale
  - Enhanced customer loyalty/satisfaction
  - Establishing or improving brand value
  - Lowered regulatory concerns
  - Increased market opportunities
  - Improved product performance
  - Decreased liabilities
- Quantitative Benefits (Waste Related)
  - Reduced waste handling cost
  - Lowered waste categorization cost
  - Reduced waste treatment cost
  - Reduced waste disposal cost
- Quantitative Benefits (Life Cycle Related)
  - Lowered transportation cost
  - Decreased packaging cost
  - Lowered cost of production
  - Low maintenance cost
  - Reduced overall cost of organization

## V. Conclusion

Green supply Chain Management can help to reduce the impact of organizations activity without sacrificing quality, performance efficiency, cost and reliability.

## References

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