BENEFITS ON IMPLEMENTATION OF GREEN SUPPLY CHAIN MANAGEMENT IN MANUFACTURING INDUSTRIES

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ABSTRACT

***G**reen Supply Chain Management (GSCM) is one of the recent innovations for the enhancement in capabilities of Supply Chain Management. The major six activities of the supply chain; namely Green Sourcing & Procurement, Green Manufacturing, Green Warehousing, Green Distribution, Green Packaging, and green transportation. GSCM is a progressively widely-diffused practice among companies that are seeking to improve their environmental performance. With regards to the rising global awareness of environmental protection, businesses have employed their GSCM to improve their core competitive advantage. GSCM is a progressively widely-diffused practice among companies that are seeking to improve their environmental performance. By using GSCM we can control the air pollution and makes environment clean as a result the cost of final product can be reduced.*

Keywords: Green Supply Chain Management, Supply Chain e (SCM); Green Sourcing & Procurement, Green Manufacturing, Green Warehousing, Green Distribution, Green Packaging, Green Transportation

I. INTRODUCTION

The subject of green supply chain management (GSCM) attracts a growing interest in academic and professional literature since 1990. The GSCM is defined as the achievement of economic, environmental, and social goals in the systemic coordination of key inter-organizational business processes to improve performance in the long-term for the organization and its partners in the supply chain (Ageron, et al., 2012)[1] .

Increasing awareness about environmental protection in India and world, the green trend of conserving the Earth‘s resources and protecting the environment is overwhelming, thereby exerting pressure on industries in India and worldwide. India has gained its position among the top ten countries and has become one of the largest manufacturing economies of the world. The pressure and drive accompanying globalization has prompted industries to improve their environmental performance. Consequently, industries have shown growing concern for the environment over the last decade. Industrial environments have experienced drastic change and face competitive challenges. Recently supply chain management has directed its attention to the role of the supply chain in impacts to the natural environment.

Today, environmental pollution is the main problem which has the potential to lead to the extinction of mankind on Earth if not addressed at the moment. Global warming, an effect due to the Increase in amounts of the green house gases present in the air is the most severe problem.

The supply chain is an integrated manufacturing process wherein raw materials are converted into final and finished products, then delivered to consumers or end user. An increasing number of supply chains invest in recycling systems intended to retrieve waste or used product from consumers. Green supply chain management, also known as ESCM (environmental supply chain management).

II. GREEN SUPPLY CHAIN MANAGEMENT

GSCM is a concerted effort across the enterprise and is more than simply implementing some ecological practices, but rather a coherent approach for improving environmental and organizational performance of all levels of management (Zhu, et al., 2007)[2]

(Srivastava, 2007) defined GSCM as integrating environmental considerations into SCM including product and service design, procurement, manufacturing processes, distribution, and end-of-life management of the product to achieve sustainable competitive advantage.[3]

"Supply chain consists of all parties involved directly or indirectly in fulfilling a customer request. It not only include the manufacturer and suppliers but also transporters, warehouses, retailers and customer themselves"

"GSCM is an Integrating environmental thinking into supply chain management including product design, material sourcing and selection, manufacturing processes & delivery of the final product to the consumers and end of life management of product after its useful life.

III. EXPECTED BENEFITS GENERATED BY GREEN EFFORTS

- Enhanced public relations.
- Enhanced brand image.
- Reduce energy cost.
- Increase brand loyalty by consumers.
- Increased revenue.
- Increased market share.
- Improve productivity.
- Improve quality.
- Reduced service related cost.
- Reduced uncertainty.
- Reduced packaging cost.
- Reduced manufacturing cost.
- Reduced raw material or component cost.

IV. LITERATURE REVIEW

Pilar L. Gonzalez et al. (2004)[4] performed comparative study on Spanish and Belgian bottling / packaging industries in accordance with sub-sector of activity within the food and drinks industry, focusing especially on the joint implementation of environmental practices in collaboration with suppliers and customers.

Nidhi Shah (2005)[5] concluded that Green purchasing is responsible purchasing going beyond price and volume. The most uniformly successful way to promote, improved environmental performance is through the

supply chain. There are growing numbers of companies that have demonstrated that buyer – supplier collaboration on environmental issues results in better economic as well as environmental performance for both parties. Multinational and large companies and government have a number of opportunities to promote green purchasing and to take advantage of the trends in globalization to improve the environmental performance.

Benita M. Beamon (2005)[6] concluded that environmentally conscious supply chain management (ECSCM) refers to the control exerted over all immediate and eventual environmental effects of product and processes associated with converting raw materials into final products. This paper describes ECSCM as a component highlights the measure issues associated with ethical decision-making in supply chain management.

Hee Kyung An, et al.(2008)[7] Realized as the ROHS (Restriction on the use of Hazardous substances) directive motivates a Japanese EEE manufacturer to implement GSCM, the manufacturer has recognized collaborative relationships with its parts supplier to essential conditions for effectively implementing the GSCM. The collaborative relations are advanced by sharing GSCM policies, information sharing, joint actions etc.

Chun-Jan-Chung, Hui Ming Wee (2008)[8] concentrated on green product design due to increased competitive pressure, environmental consciousness and ecology protection. Green product design has received much attention recently because product design significantly influence the cost of assembly, component inspection and repair, remanufacturing and recycling. The author developed an integrated inventory model with green component life cycle value design and remanufacturing.

Jospech Sarkis et al. (2011)[9] realized that GSCM has gained increasing attention within both academia and industry. As the literature grows, finding new directions by critically evaluating the research and identifying future direction becomes important in advancing knowledge for the field. Using organizational theory to help categorized the literature provides opportunities to address and for future direction.

V. SUSTAINABILITY PERFORMANCE MEASURES FOR GREEN SUPPLY CHAIN MANAGEMENT

- Level of process optimization for waste reduction
- Level of pollution control
- Level of waste and emissions
- Amount of Energy consumption
- Level of recycled material in product
- Availability of eco-labeling
- Level of usage of design-for-assembly
- Recycling time
- Amount energy consumption during the recycling
- Waste reduction
- Customer interest in green products
- Customer satisfaction from green products

VI. IMPLEMENTATION OF GSCM IN MANUFACTURING INDUSTRIES

Implementation of GSCM is very important in to controlling Air pollution , Reduction of wastages, Improving quality of product having Green Sourcing & Procurement, Green Manufacturing, Green Warehousing, Green Distribution, Green Packaging, and green transportation Product manufactured by industries should be green ie; pollution free during usage. Environment friendly product designs, issues involving manufacturing must also be addressed to have a complete concept of green manufacturing ie; the design of product should be eco friendly such as designing of machines. One of the main objectives of green manufacturing process is to reduce the use of unwanted material and other resources/energies as it indirectly reduces the amount of waste at manufacturing stage. Emission reduction is another significant accepts of green manufacturing. Industry must choose a sufficient and nearest way to bring vendors. Proper maintenance of machine will reduce the smoke by burning fuel which decreases air pollution in industries. Recycling of waste materials plays an important role.

By using GSCM we can control the air pollution and makes environment clean as a result the cost of final product can be reduced.

VII. CONCLUTION

Green Supply Chain Management (GSCM) is one of the recent innovations for the enhancement of capabilities of Supply Chain Management. Implementation of GSCM is very important in to controlling Air pollution , Reduction of wastages, Improving quality of product having Green Sourcing & Procurement, Green Manufacturing, Green Warehousing, Green Distribution, Green Packaging, and green transportation Product manufactured by industries should be green ie pollution free during usage. Environmentally friendly product designs, issues involving manufacturing must also be addressed to have a complete concept of green manufacturing ie; the design of product should be environmentally eco friendly such as designing of machines. GSCM is a progressively widely-diffused practice among companies that are seeking to improve their environmental performance. With regard to the rising global awareness of environmental protection, businesses have employed their GSCM to improve their core competitive advantage.

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