

An Extensive Literature Review on Green Supply Chain Management

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Abstract-*In present the companies doesn't practice any supply chain in their organization. The implement of supply chain could reduce the environmental pressures and wastes of the companies to some extent. The lean wastes identified in the process could be eliminated by practicing suitable lean tools and methods. The final disposal wastes are considered to be the green wastes. The method of disposal practiced by the SSIs in India shows an evidence of how much they concern towards the environment. Environmental pollution is the major problem that mankind faces in present state, the major emission of toxic gases is from manufacturing industries. The research focuses on three different types of Small Scale Industries (SSI) in India that are bumper manufacturing industry. The product life cycles of the process for industry and their final green waste disposal methods are study. The industries are identified with more lean wastes within their product life cycle process. The major green wastes from their disposal methods have high influence on environment. These wastes have to be reduced or eliminated by practicing a suitable supply chain. The research study tries to explain some suitable waste management technique for the industries and discusses about importance of government role on making this techniques possible. The small scale industries experiences both wastes, so it has to integrate lean for practicing green supply chain.*

Keywords: Green Supply Chain Management (GSCM), Waste management.

I. INTRODUCTION

Environmental pollution is the main problem which mankind faces every day, the major emission of toxic gases is from the manufacturing industries. To overcome this problem and to reduce environmental pollution, the manufacturing industries should include concepts of Green in to their supply chain. Environmental concern has become an important factor in manufacturing industries, so they are in need of practicing supply chain concern towards environment or also known as Green Supply Chain Management. Green supply chain management is defined as integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product its useful life. The industries subjected to study are the small scale industries in India. The small scale industries in India play a vital role in the Indian economy. The growth of small scale industries (SSI) in India is huge in recent years. The small scale

industries in India creates a largest employment opportunities for the Indian populace, next only to agriculture. It has been estimated that a hundred thousand rupees of investment in fixed assets in small scale sector generates employment for four persons. The small scale industries contribute 40% of gross manufacture to the Indian economy. In spite of this small scale industries play a major role in India's present export performance. 45%-50% of the Indian export is being contributed by small scale industries sector.

There are three major types of small scale industries which have more revenues; they are food product industries, garment manufacturing industries and metal industries. The growth of the industries is rapid but the growth can't be stated as vigorous growth because of their awareness and concern towards environmental manufacturing. The industries are experiencing an increased pressure to reduce cost, improve quality and reduced time of delivery to sustain in the present market, so they are narrowed on focusing to the factors of their sustainability and other influencing factors to the environment are ignored. The lack of awareness and because of high recklessness the environment is affected to great extent by these industries. According to study by Rao (2002) show that a majority of worlds manufacturing domain would be carried out in Asia for several reasons in the upcoming decades. This would motivate the industries to think on GSCM in order to maintain their competitiveness. The many actions of the concept is restrained due to economic reasons, so there is a need of necessity to show the guidance and proof of economic benefits that would help for the broader appliance of the concept.

II. SUPPLY CHAIN MANAGEMENT

In the present competitive world the relationships with supplier and customer plays a significant role in a company's growth. Generally the companies seek benefits for both themselves and their clients; these benefits can be achieved by a formalized process known as Supply chain. According to Somoygi et al (2009) Supply chain includes managing supply and demand, purchasing raw materials and spare parts, manufacturing and assembling, warehousing and inventory managing, order entry and management, distribution and logistics across all channel

and finally delivery to the customer. Supply chain management can be defined as the integration of all these activities in to seamless and formalized process (Somoygi et al, 2009). Initially the supply chain was introduced to integrate the key business process, from supplier to the end user, were the information's on the process adds value for the consumers.

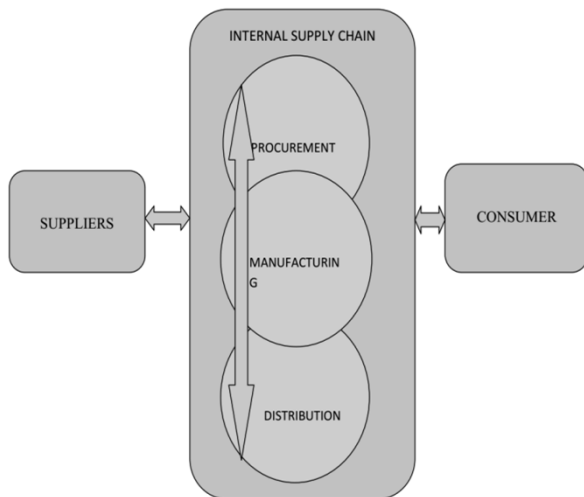


Fig. 1 Company's Supply Chain (Somoygi et al, 2009)

According to Wallerius and Zakrisson (2010) in recent years the demands and conditions of supply chain have been changed according to the manufacturing and distributing companies. The core competencies are been kept with the manufacturing firm itself and most of the other process are been outsourced in large extent, so this increases the demand of supply chain and management within the firm.

supply chain as a “set of three or more entities (organizations or individuals) directly involved in the upstream and downstream of products, services, finances and information from a source to a customer”. The supply chain can be identified by three different complexities “a traditional supply chain”, “an extended supply chain” and “an Ultimate supply chain”. The traditional supply chain can be defined as the flow of upstream and downstream

between supplier, manufacturer and customer (Mentzer et al, 2001). According to Beamon (1999) traditional supply chain is an integrated manufacturing process were the raw materials turned in to a final product and then delivered to the customer (Fig. 2).

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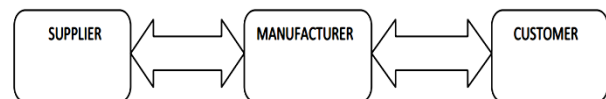


Figure 3a- Traditional Supply Chain (Mentzer et al, 2001)

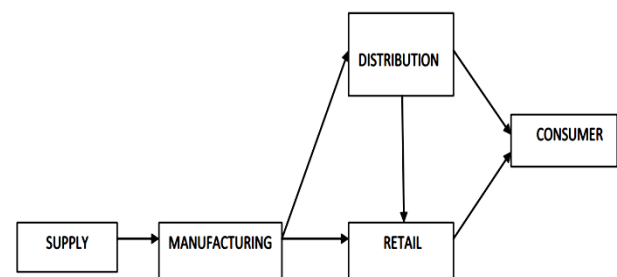


Fig. 2- Traditional Supply Chain (Beamon, 1999)

III. LITERATURE REVIEW

Table: 1 Summary of Literature Review

S.R. NO.	TITLE	AUTHORS	YEAR	APPROACH
1	An analysis of the drivers affecting the implementation of green supply chain management	Ali Diabata, [*] , Kannan Govindan b, [*]	2010	A model of the drivers affecting the implementation of green supplychain management

2	Analysis of the barriers for implementing green supply chain management (GSCM) Practices: An Interpretive Structural Modeling (ISM) Approach	Arvind Jayanta*, Mohd Azharb	2010	A structural model of barriers to implement GSCM in Indian industry has also been put forward using Interpretive Structural Modelling (ISM) technique
3	Implementation of the green supply chain management in manufacturing industry in india using interpretive structural modeling technique	Sunil Luthra 1, Dixit Garg2, Sanjay Kumar3, Abid Haleem	2012	The contextual relationships among the factors to implement Green Supply Chain Management
4	Customer involvement in greening the supply chain: an interpretive structural modeling methodology	Sanjay Kumar1*, Sunil Luthra2 and Abid Haleem	2013	An attempt to explore the involvement aspect of customers towards greening of the supply chain (SC)
5	An innovative approach to evaluate green supply chain management (gscm) drivers by using interpretive structural modeling (ism)	MINHAJ AHMED ABDUL REHMAN	2010	To integrates environmental thinking into supply chain management; from conceptual product
6	Subsequently the green supply chain (GSC)	Scott , Westbrook New , Payne	1991	The chain connecting each element of the manufacturing

IV. MOTIVES FOR GREEN SUPPLY CHAIN MANAGEMENT

The Green supply chain is emerged as a response for long term trends in manufacturing industries. In the early 20th century the manufacturing industries are characterized by consolidation of vertical integration i.e. the major components for the product is manufactured and assembled within the industry. In the later part of the 20th century it is characterized by outsourcing functions were the industries made to be more dependent on their suppliers for good and needed quality, promptly delivery of goods and to make the product in competitive prices. So the supplier's environmental impact can affect the any of those elements, so it is demanded that the suppliers should practice the green supply chain to help the organization to overcome the environmental challenges (Green Business Network, 2001). The green supply chain can be practiced in organization through several internal and external drivers. New Zealand Business Council for Sustainable Development (NZBCSD) as described in their practical guide for Business Guide to a Sustainable supply chain (2003) is that the supply chain is mainly focused on three areas as central:

- Improving the performance of business's own operations.
- Ensuring that the goods and services provided by suppliers are sustainable and working with the suppliers increases the efficiency and competitiveness.
- Working effectively with customers and sales channel to design sustainable products and services.

V. CONCLUSION

Environmental effects caused by the industries is the main problem that mankind faces every day. The traditional supply chain practiced in the industries in early 1990's, focuses on the cost reduction and improving of different flows within the organization but the environmental consideration is ignored (Srivastva 2007). So the researchers and industries started to redefine the traditional supply chain by including the environmental factors in to the supply chain and also making the industries economically profitable by using this extended supply chain. In the present globalized and competitive market the industries are pressurized to follow the environmental management, these pressures are derived from the internal and external sources in the organization (Zhu et al, 2008).

So the need of interest of practicing is increased among the industries till to the end customer.

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