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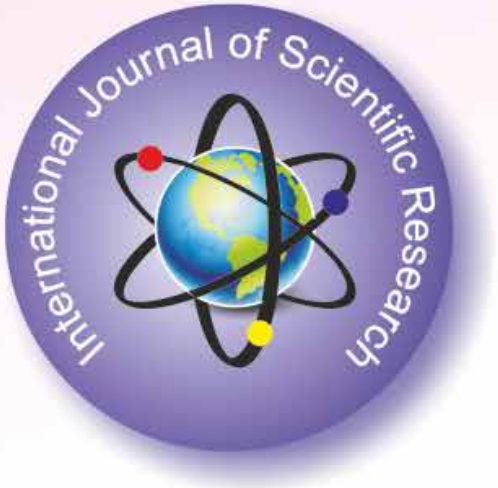

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Research Paper

A Conceptual Framework Of Green Supply Chain Management

Commerce

KEYWORDS : Green Supply Chain (GSC), Marketing, Business.

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ABSTRACT

Today, Green Manufacturing supply chain is considered as a prerequisite for sustainable development. Customers are increasingly demanding to know where the products come from, how they are made and distributed, and what impacts future legislation will have on the products they buy. Increasing awareness about the eco-friendly aspects of business and organisations has necessitated the imbibitions of added connotations, referred to as green initiatives, to the existing definitional form of supply chain management. This new concept called Green SCM or GSCM throws light on the eco-friendly sustainability aspects of SCM operations and logistics on one hand and speaks about the reduced environmental footprints left behind by human activities on the other. The present research paper highlights the conceptual framework of green supply chain management, its drivers and the indispensable role of the government to promote green supply chain importance.

INTRODUCTION

Green supply chain management is stranded on the scaffold of traditional supply chain management. Today, environmental pollution is the main problem which has the potential to lead to the extinction of mankind on earth if not addressed at this moment. Of the various kinds of pollution, air pollution is the one which needs immediate attention. Global warming, an effect due to the increase in amounts of the green house gases present in air is the most severe problem mankind is facing at the moment. Over the past decade, the green supply chain (GSC) has emerged as an important component of the environmental and supply chain strategies of a number of companies (Holt et al., 2001). In the context of green supply chain management, there exists interdependency between conventional supply chain management and eco-programs (Sarkis, 2001). In this way, the traditional 'end-of-pipe' philosophy is changed into a 'cradle to cradle' mindset (Fleischmann, 2001), and the tough situation between demand and supply of natural resources can be released. Accordingly, van Hoek (1999) calls for an examination of a company's 'ecological footprint' in order to lower the environmental damage of business. Hick (2000) even claims that the idea of green businesses forces the re-examination of the very purpose of a company's existence. Within companies, eco-programs are partly used. One important reason for companies to deal with ecological aspects is the polluter-pays principle, which was legislated by the government. It makes the polluter responsible for the disposal of negative environmental influences and provokes companies to design the whole life-cycle to be more eco-friendly and, thereby, to consider subsequent consequences of their products (Guide et al., 2000). Additionally, numerous new voluntary environmental programs are being introduced by organisations (Sarkis, 2001). Besides legislative drivers and environmental programs, economic aspects are important as well. New value can be created by a company if returned products are reused through approaches such as re-manufacturing or recycling. The underlying processes for value creation often only require a fraction of the energy and resources in comparison with production based on primary raw material. This can increase productivity and efficiency (Fleischmann, 2001). Furthermore, concepts such as reverse logistics or green supply chain management are implemented due to considerations concerning marketing in order to sanitize the 'green' image of the company in public. Additionally, companies think that they can differentiate themselves from competitors by an ecological alignment of the supply chain, leading to a competitive advantage in the long run.

CONCEPTUAL FRAMEWORK OF GREEN SUPPLY CHAIN MANAGEMENT

Since supply chain management implies inter-organisational cooperation, green supply chain management follows the same approach and adds a 'green' component in accordance with environmental management, which encompasses all efforts to minimize negative impacts of the firm's products and their underlying processes throughout their life cycle. In this sense, green supply chain management strives to give an answer to the question of how supply chain management can be used to consider ecological aspects most effectively in business processes. By integrating ecological aspects of a product's entire life cycle into the overall closed-loop system, the extraction of raw material is already taken into account, as well as processes after the useful life of a product, e.g. collection, transportation and inspection, until the product is finally disassembled, remanufactured or disposed of (Trowbridge, 2001). Green supply chain management lifts environmental management onto the supply chain level. Therefore, the key issue is the eco-oriented design of inter-organisational processes. The green supply chain management concept enlarges the so far inner-oriented horizon of ecological efforts by relationships of multiple companies because isolated solutions can only lead to small improvements. Accordingly, suppliers, manufacturers, customers and disposal companies must be integrated in implementing green supply chain management. Green Supply Chain is a method to design and/or redesign the supply chain, which incorporates recycling and re-manufacturing into the production process. This involves the minimization of a firm's total environmental impact from the start to the finish of a supply chain, and also from the beginning to the end of a product life cycle.

REVIEW OF LITERATURE

Increasing awareness of environmental protection worldwide, and the pressure accompanying globalization has prompted manufacturing companies to improve their environmental performance (Chien & Shih, 2007), and to address all environmental related issues in order to maintain customers, exist, and thrive in an ever more critical global economy (Chavan, 2005). This environmental preoccupation appeared to become part of Sustainable Development. Sustainable Development often been cited as one of the main mechanism for changing the economic growth. Nevertheless, one of the main barriers to sustainable industrial development rests on how to implement these sustainable strategies or more importantly, how to introduce them into the existing practices whilst ideally improving competitiveness (Baldwin et al., 2005).

GREEN SUPPLY CHAIN MANAGEMENT DRIVERS

Green Innovation

Green innovation embrace raw material, design, manufacturing, energy consumption, water consumption, product recovery management, waste management, forward logistics, reverse logistics, etc., to achieve better environmental performance, cost reduction and customer satisfaction enhancement for the entire life cycle of products. Green product innovation have strategic implications in SMEs. The drivers of green product innovation, and the choice of a proper R&D strategy explicitly accounts for eco-efficiency of product technologies. As a key member of GSC, a manufacturer should initiate the green innovation. Top management should support and encourage this effort with appropriate resources. Some authors listed different components of the innovative organisation— shared vision, leadership and the will to innovate; appropriate structure; key individuals; effective team working; continuing and stretching individual development; extensive communication; high involvement in innovation; external focus; creative climate; and learning organ-

isation. While some concluded through their empirical study that explicitness and accumulation of environmental practices, organisational encouragement, quality of human resources, environmental uncertainty and governmental support exhibit significant influences on the willingness to adopt green innovations for logistics service providers. Continuous efforts should be made for green innovation, which will increase the pace of green efforts drastically.

Green Packaging
Green packaging minimizes the amount of material used, and addresses the environmental concerns that surround product packaging. Wal-Mart Stores have committed to reduce packaging across its global supply chain by 5% by 2013 and have developed a 'scorecard' system that allows suppliers to evaluate themselves relative to other suppliers, based on specific metrics. The metrics in the scorecard evolved from a list of favorable attributes known as the '7 R's of Packaging': Remove, Reduce, Reuse, Recycle, Renew, Revenue, and Read. All these things aim at minimizing the amount of packaging that enters the waste stream. Recycling and reuse are key strategies that are adopted.

Green Sourcing
Green sourcing is the entire set of business processes required to purchase goods and services, with an emphasis on green concepts. Green sourcing promotes GP or Environmentally Preferable Purchasing (EPP). GP is defined as an environmentally conscious purchasing practice that reduces the sources of waste and promotes recycling and reclamation of purchased materials, without adversely affecting performance requirements of such materials. Some of the key issues in GP include coordination with suppliers for green innovation or research, supplier environmental certification, supplier initiative environmental issues, compliance, etc. Purchasing can become an important agent for change concerning environmental initiatives in the supply chain. The potential benefits that a company may achieve from GP are cost saving, waste reduction, enhanced company reputation/image, improved environmental performance, etc. The major obstacles to GP are high cost of environmental programs, uneconomical recycling, uneconomical reuse and availability. The major processes related to green sourcing are 'green supplier selection' and 'design collaboration'. Green supplier selection has a direct impact on GSCM, in terms of environmental performance, cost, quality and delivery of products.

Green Design (GD)
GD emphasizes both environmentally conscious design and life cycle assessment/analysis of products. The aim is to develop an understanding of how design decisions affect a product's environmental compatibility. GD is also referred to as sustainable design, eco-design and design for environment, which means designing products with the principles of economic, social and environmental sustainability. As a design management process, GD has always been concerned with minimizing full life cycle impacts of products and services (e.g., energy, materials, distribution, packaging and end-of-life treatment).

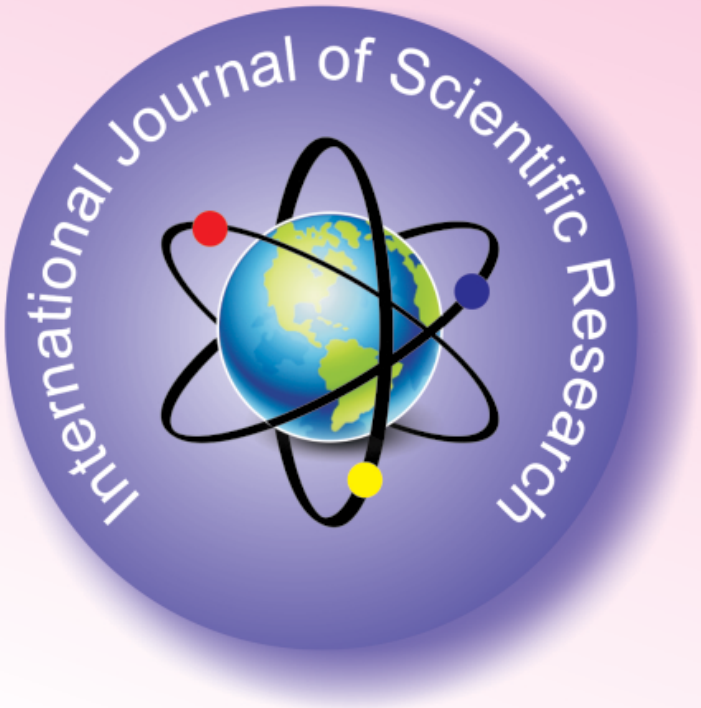
ROLE OF THE GOVERNMENT TO PROMOTE GREEN SUPPLY CHAIN
The government may take the following steps to encourage the green focus in the manufacturing supply chain:

- The government should promote green innovations in significant areas of GSCM. It should also open an institute for green excellence, which will provide a platform for training, research and development on GSCM. The institute will also work on different green issues, green legislation, green benchmarking, etc.; and
- The government needs to make continuous efforts to sensitize the common man on the need for creating a green and clean environment, through green literacy programs.
- The government's initiative plays a vital role, and hence, it is proposed as a second antecedent in the successful adoption and implementation of GSCM.

CONCLUSION
The green concepts in the manufacturing supply chain should be studied with perfection. This is the need of the hour because they estimate the impact of different processes, activities and product life cycles on the environment along the supply chain. From the discussion, it is clear that GSC implementation in the manufacturing environment needs efforts from all corners, and is not limited to customers, the media, the government, manufacturers, suppliers, and logistics providers. Greening the manufacturing supply chain may result in one or more benefits, in terms of cost reduction, operational efficiency improvement, flexibility improvement, sales enhancement, customer value enhancement, and societal image improvement.

REFERENCE

Holt, D., Anthony, S. and Viney, H. (2001), "Supporting environmental improvements in SMEs in the UK", Greener Management International, Vol. 35, pp. 29-49. | Baldwin, J.S., Allen, P. M., Winder, B., & Ridgway, (2005), "Modelling Manufacturing Evolution: Thoughts on Sustainable Industrial Development", Journal of Cleaner Production, Vol. 13, pp. 887-902. | Chavan, M. (2005), "An Appraisal on Environment Management Systems - A Competitive Advantage for Small Business", Management of Environmental Quality: An International Journal, Vol. 16, No. 5, pp. 444-463. | Chien, M. K., & Shih, L. H. (2007), "An Empirical Study of the Implementation of Green Supply Chain Management Practices in the Electrical and Electronic Industry and their Relation to Organisational Performances", International Journal of Environment Science Technology, Vol. 4, No. 3, pp. 383-194. | Sarkis J. (2001), "Introduction", Greener Management International, Vol. 35, No. 3, pp. 21–25. | Trowbridge P. (2001), "A Case Study of Green Supply-chain Management at Advanced Micro Devices", Greener Management International, Vol. 35, No. 3, pp. 21–135. | Fleischmann M. (2001), "Quantitative Models for Reverse Logistics", Lecture Notes in Economics and Mathematical Systems, Vol. 501. Springer: Berlin. | Hick S. (2000), "Morals make the money", Australian CPA, Vol. 70, No.4, pp. 72–73. |



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