

Green Marketing and Sustainable Supply Chain Management Inter-Correlation with Hub and Spoke Model

Nagothu Anusha¹, Syed Rabbani¹, Yarasi Sivasai²

¹Student, Marketing, Universal Business School, Karjat, Maharashtra, India.

²Student, Operations and Supply Chain, Universal Business School, Karjat, Maharashtra, India.

Corresponding Author: nagothu.anusha@ubs.org.in

Abstract: Green marketing and sustainable supply chain management have been identified as needing to be seamlessly connected so that green customers' expectations may be better served by supply chain capabilities. The point-to-point integration technique has been studied in the past. This study presents a novel hub-and-spoke integration model for green marketing and sustainable supply chain management that considers six dimensions: product, promotion, planning, process, people, and project (called the 6Ps). The findings of an empirical study on integration dimensions, integration tactics, and multi-dimensional integration drivers and impediments are provided, along with management implications. The new integration architecture provides for the free flow of information.

Key Words: —Green Marketing, Sustainable Supply Chain Management, point to Point Integration, Supply Chain Capabilities, Hub-and-Spoke Integration Model.

I. INTRODUCTION

1.1 Green Marketing

Green marketing is the process of creating and selling items based on their actual or perceived environmental sustainability.

1.2 Sustainable Supply Chain Management

A sustainable supply chain is one in which ethical and environmentally conscious practises are fully incorporated into a lucrative and competitive paradigm. Openness across the whole supply chain is critical; sustainability measures must include everything from raw material procurement to last-mile transportation, as well as product returns and recycling.

1.3 Point to Point Integration Model

The goal of this empirical study is to see if the theoretical multi-perspective model can be used to integrate green marketing with sustainable supply chain management.

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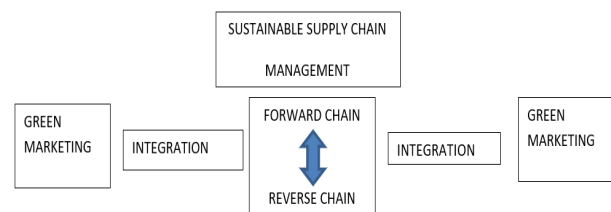


Fig.1. Illustration of point-to-point integration model

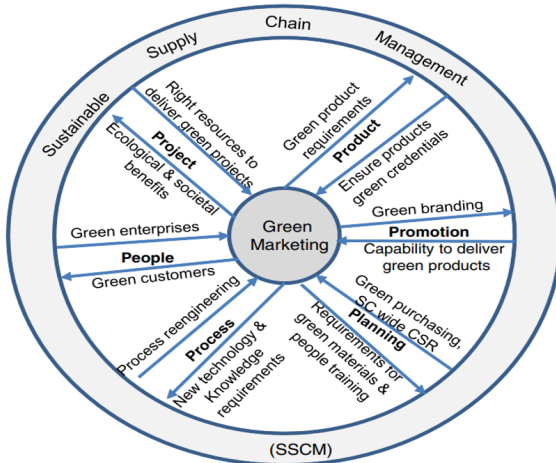
1.4 Supply Chain Capabilities

- Management physical flow of goods
- Logistics commutation
- Warehouse and Storage Management
- Material Handling
- Distribution of Goods

1.5 HUB AND SPOKE Integration Model

A hub and spoke model are a centralised storage and delivery system that looks like a bicycle wheel. The hub, or distribution centre, is at the centre of the wheel, and each spoke denotes a delivery direction.

In a hub and spoke system, on the other hand, distribution hubs or warehouses are strategically located within the city from which many delivery sites within a region may be reached with the least amount of trip distance and time.



(Jonathan Moizer, 2012)

1.6 Objective

- To study the Significance between green supply chain management and green marketing.
- To study the green marketing practices and green supply chain process.
- A hub-and-spoke model for multi-dimensional integration of green marketing and sustainable supply chain management.

II. RESEARCH METHODOLOGY

Primary data	Questionnaires
	Surveys
	Interviews

Secondary data	• Past research papers	• Companies implementing green marketing practices
	• Press releases	• Companies with B2B marketing
	• Journal articles	• Companies with Global supply
	• SAGE publications	
	• Google	

	<p>scholar</p> <ul style="list-style-type: none"> • Scopus • CBS library 	<p>chain</p> <ul style="list-style-type: none"> • Focused on aerospace, automotive, electronics and apparel industry implementing sustainable supply chain management.
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III. LITERATURE REVIEW

Marketing is generally linked into supply chain management at the beginning of the chain through product design, such as utilising the Quality Function Deployment approach, or at the end through hard product marketing, such as advertising (Jonathan Moizer, 2012). The technique of selling products and/or services based on their environmental benefits is referred to as green marketing. Such a product or service should be environmentally friendly in and of itself, or created in an environmentally friendly manner (Ms. Anuradha Gaikwad, 2011). Many distribution systems, including aircraft passenger carriers and express package delivery networks, use hub-and-spoke networks. Hubs act as transshipment sites, allowing direct connections between all nodes to be replaced with fewer, indirect connections (bryan, 1999). The relevance of environmental, social, and corporate responsibility via economic performance has drawn the attention of business and academics to the notion of sustainable supply chain management (SSCM). The purpose of this paper is to explore these difficulties (Panigrahi, 2019).

3.1 HYPOTHESIS – Data Analysis

3.1.1 To study the Significance between green supply chain management and green marketing:

H0 - There is Significance between green supply chain management and green marketing

H1 - There is **NO** Significance between green supply chain management and green marketing

3.2 Research Model



Fig.2. Relationship between green supply chain management and green marketing strategy on green purchase intention. (Sugandini, 2020)

Sample: – data obtained through my survey during internship on 2 companies.

After the survey poll, after concluding the observations we given the following scores.

Observed Frequencies:

- Green marketing strategy influence – marked for a **score out of 10**
- GSCM influence **scored out of 20**

	Product Development	Distribution and Logistics
Green Marketing strategy influence	6	7
GSCM Influence	13	16

Expected Frequencies

	Product Development	Distribution and Logistics
Green Marketing strategy influence	6.10	6.91
GSCM Influence	13.56	15.41

3.2.1 CHI SQUARE TEST for checking significance:

$$\chi^2 = \sum (O_i - E_i)^2 / E_i$$

- O_i = observed value (actual value)
- E_i = expected value

Calculation

$$= \frac{[6 - 6.10]^2}{6.10} + \frac{[7 - 6.91]^2}{6.91} + \frac{[13 - 13.56]^2}{13.56} + \frac{[16 - 15.41]^2}{15.41}$$

$$= 0.0016 + 0.00117 + 0.02312 + 0.0225$$

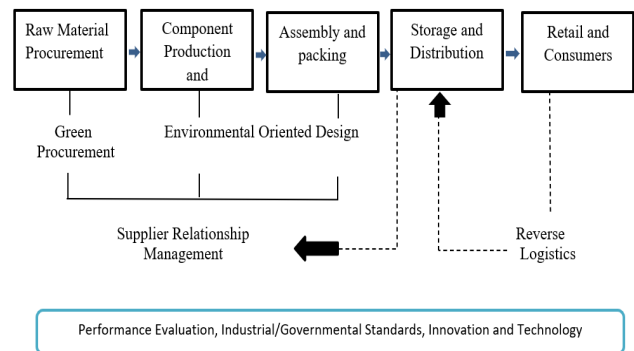
$$= \mathbf{0.048}$$

3.3 Interpretation

- As the CHI Square Test Value 0.048 is less than 0.05, it means there is confidence of **95.2 % for rejection of null hypothesis.**
- Hence there is significance between green marketing and green supply chain practice on product development and distribution.

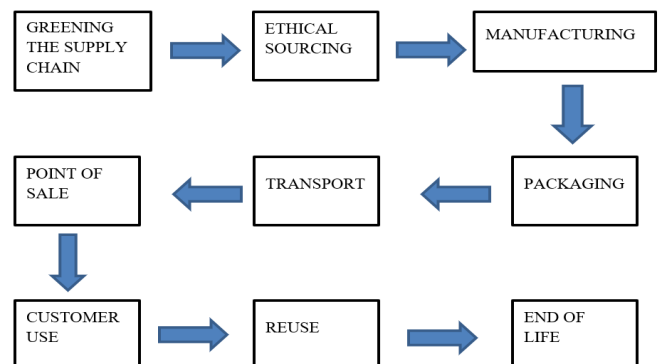
3.3.1 To study the green marketing practices and green supply chain process:

Activities in Supply Chain:



(Chan, 2012)

3.3.2 Green supply chain process – CHILD CRIB example:



3.4 Green Marketing Strategies - (Sulkowski, 2020)

3.4.1 Cause Related Marketing:

A certain amount of money or a product is donated to an NGO or utilised for a clearly defined environmental or social cause for every product sold. The collaboration partner or philanthropic goal should be congruent with the donor's own portfolio, and the commitment should be documented and presented publicly to build a clearly visible relationship to one's own brand. Brand trust can only be developed in this manner.

3.4.2 Transparency and Responsibility

In keeping with this ethos, a firm should offer for transparent sustainability reporting that goes beyond legal obligations and reveals information such as collaborating suppliers and the sources and methods of getting raw materials for its goods. Customers will have more faith in the firm and its products as a result of this. Those with a clear conscience appear to be customer-focused and trustworthy since they have nothing to conceal.

3.4.3 Campaigns and Initiatives Without Branding

The approach tries to launch a campaign that promotes the common good or sustainability, but which appears to have little to do with the firm at first appearance, and may even hinder product sales. Patagonia, for example, has made a commitment to the long-term usage of clothes by encouraging the repair of broken items and the resale of old items.

Green marketing strategy is a comprehensive management approach for finding, predicting, and satisfying customer demand in a sustainable manner. Green marketing, according to (Maheshwari, 2014) and (Sugandini, 2018), is a creative opportunity to innovate in different ways to achieve business success through environmental / ecological issues orientation, product more environmentally friendly, educate customers to be environmentally responsible, and consume green products (Grant, 2007). GM is a marketing activity that considers environmental concerns as a company development duty. Green product demand will rise as customers become more aware of green items (Oyewale, 2001).

3.4.4 Interpretation

Individuals that utilise green products to conserve the environment for the future are known as green consumers. According to an empirical study, buyers who have a greater understanding and awareness of environmental issues are more likely to buy.

3.5 A hub-and-spoke model for multi-dimensional integration of green marketing and sustainable supply chain management.

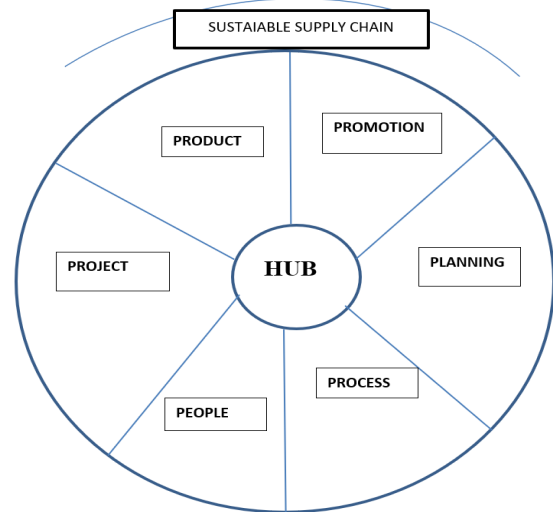


Fig.3. Multi Integration Model

1. PRODUCT	Green product requirements
2. PROMOTION	Green branding
3. PLANNING	Green purchasing & requirements for green materials
4. PROCESS	Process re-engineering
5. PEOPLE	Green enterprises and green customers
6. PROJECT	Right resources to deliver green projects

3.5.1 Green product requirements:

- Energy-efficient, long-lasting, and frequently low-maintenance.
- There are no ozone-depleting chemicals, hazardous compounds, or harmful by-products produced.
- Recycled materials or content, as well as renewable and sustainable sources, are frequently used.
- Biodegradable or readily re-usable in part or in its entirety.

3.5.2 Green Promotion - (Anon., n.d.)

FRESH:

Green evokes the feelings of something being clean, new and fresh. These positive attributes make it a great choice for food-related brands and restaurants.



Fig.4. Prestige And Wealth

Highly associated with growth, vitality and motivates people to join social groups and pleases their need to belong. As a result, the colour green is popular with premium lifestyle brands and financial firms.



Fig.5. Trust

Inspiring trust, clear thinking and the assistance in one's search for worldly wisdom and understanding, the colour green is useful for branding technology companies and large global brands.



Fig.6. All-Natural

There is no shortage of green out in mother nature which makes this colour the perfect choice for a brand associated with organic products or its interaction with the great outdoors and its many inhabitants.



Fig.7. Green Planning

Customers (corporations or individuals) are increasingly asking companies to give the carbon footprint of their products. They will be questioned not only about the carbon footprint of their products in the future, but also how they can minimise the carbon footprint or even produce items with a predetermined maximum carbon footprint. The "green line" will become an important aspect of operational sourcing and supply chain planning, alongside cost and lead time review and optimization.

3.6 Green process

A green process refers to the specific actions that allow reducing the environmental impacts among all the processes involved in the manufacture activities of a product.

The goal of supply chain reengineering is to eliminate the uncertainty that comes with many parts of the chain, such as changing customer wants and requests, information quality, and inherent delays that impact purchase and ordering choices.

3.7 Green project resources

- Energy Efficiency and Conservation.
- Transportation.
- Water Efficiency and Conservation.
- Healthy Environment.
- Healthy Community.
- Reducing Waste and Recycling.
- Healthy Economy.

3.8 Findings

- Green marketing strategy is a comprehensive management approach for finding, predicting, and satisfying customer demand in a sustainable manner.
- A hub and spoke model are a centralised storage and delivery system that looks like a bicycle wheel.
- There is a significance between green marketing and GSCM.
- The GSCM and green marketing are the critical factors in deciding the purchasing of green products.

IV. CONCLUSION

We may deduce from this research that integrating green marketing and sustainable supply chain management

necessitates a multi-dimensional strategy. Product, promotion, planning, process, people, and project all play a role in the integration process. When compared to standard B2B point-to-point integration, The hub-and-spoke integration paradigm presented in this paper is a good example of this Paper allows information, materials, people, and funds to flow freely etc. more fluidly across supplier chains and green outreach customers. Multi-dimensional integration has been used in industries, according to empirical findings, and this is especially true in the pharmaceutical industry huge corporations Several corresponding techniques have been implemented advanced and executed for product-, promotion-, and marketing-related purposes. Integration based on planning, processes, people, and projects. Companies were aware of the internal and external drives for integration, as well as the implications of doing so. However, there is an obvious need to create more systematic ways and procedures in order to take a more holistic approach to the problem.

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