# A Case Analysis of GSCM Practices in Indian Manufacturing Companies

Ravi Mishra[*] and Dr. Rohit Raj Vaidya
BUIT, Bhopal

**ABSTRACT**

The present research paper examines the factors which a company must consider while implementing Green Supply Chain Management (GSCM) practices. Three companies from Indian "Food and Beverage" (F&B) sector are examined in their approach to be more sustainable. The research method employed is comparative case study analysis. Semi-structured interviews are held with two relevant managers from each company. Top-management support is crucial for effectively working GSCM practices. Employee involvement is recognized as crucial element of GSCM. An environmental friendly company culture is beneficial and should be derived from the companies' environmental vision and mission. Collaborations with suppliers are perceived to be productive and essential to develop innovative products.

## Introduction

Many businesses around the world have exploited the environment with impunity, without any thought of sustainability. In absence of regulations, companies tend to create products and services based in part on the cost of the public goods, namely the environment. Air and water are polluted and forests are degraded. So far, there are no effective tools to include these additional real costs of a product into its end-price. Some approaches exist, for instance the European Union carbon emission trading scheme to include the price of carbon emissions in product costs, but the effectiveness of this strategy is highly controversial (Bond, 2008; Carlen, 2003).

More and more entrepreneurs and managers are motivated to behave in accordance with their personal or social codes of ethics and want to protect the environment for coming generations (Reinhardt, 1998). Another driver is the higher awareness of environmental problems from the consumer perspective, which leads to more demand for companies to balance business performance with environmental issues (Basu & Wright, 2008). Still other companies see an opportunity in these developments and want to build a business that generates a competitive business advantage. (Geyer & Jackson, 2004; Sarkis, 2003; Zhu, Sarkis, & Lai, 2008). By responding to consumer demand and adhering to their own moral codes, they can force governments to enact better environmental regulations and can compel competitors to improve their efficiency (Vachon & Klassen, 2006; Zhu & Sarkis, 2007).

This present paper explores the factors that are important for an effectively working GSCM approach in manufacturing companies. Six participants from three India based "Food and Beverage" (or F&B) companies are interviewed to examine their green approaches and check against a framework derived from the reviewed literature. The present research has two innovations. It focuses on the underdeveloped area of Green Supply Chain Management in the first instance.

## Background

Green Supply Chain Management (GSCM) is the term that refers to the way in which organizational innovations and policies in supply chain management respond to the need for a more sustainable environment (Srivastava, 2007). GSCM aims to find ways to improve some of the impacts that a company has on the environment. As important as these changes may be for the environment, they are often accompanied by cost savings, improved efficiency, and/or profitable customer awareness (Jackson & Clift, 1998; Rao, 2007; Srivastava, 2007). Some companies show commitment to GSCM practices on their websites and might even change their mission statements or something similar, but often this means nothing more than "green washing" (misinformation that presents an environmentally responsible public image) and not a real commitment (Davies & Hochman, 2007). The objectives of GSCM are aimed at finding a win-win strategy to benefit the environment as well as the performance of the company. These companies want both to exceed the expectation of the regulators and to satisfy the increasing demands of the customer. These companies strive to go further from compliance to competitiveness (Pun, Hui, Lau, Law, & Lewis, 2002).

The Indian Business Council for Sustainable Development gives a guide with several steps to implement GSCM, which focuses on procurement practices, internal operations and product development. However, managers are not always successful in introducing new practices and strategies, and the desired effects do not always take place (Heymans, 2002). A few companies in India already state they have introduced green or sustainable supply chain management.

## Research Objectives

The initial work of the present research seeks to identify a framework of factors that are important for implementing a GSCM strategy in Indian F&B companies.

The aim of this research is to obtain findings that can be generalized and applied beyond the situation in which the study is initially carried out. Further objectives are:

1. To find out to what extent top management must be part of the implementation process;

2. To identify barriers for the chosen Indian F&B companies had to overcome;

Tele:
E-mail addresses: : ravimishra8@gmail.com

3. To describe how the companies ensure that their decisions are executed at the operational or shop floor level;
4. To find out if GSCM really is a benefit for Indian companies;

**Research Methodology**

A theoretical framework is derived from the literature to guide the research. The categories of this research framework correspond with the research sub-question and include: Strategic and operational planning, Structure, systems, and decision making Management of people and company culture; Relationships with supply chain members as important factors in GSCM.

Due to the case-by-case management in two of the examined organizations, the initial aim to compare different systematic approaches was impeded. Nevertheless some similarities and important factors were identified. Despite being in the same kind industry, each company is in a different situation influencing its strategic approach to GSCM. One of the finding is the importance of including an environmental strategy into the overall company strategy and deriving from this consistent goals and objectives and eventually concrete operational instructions. Top-management support is crucial for effectively working GSCM practices. A flat hierarchical structure might be helpful for successful GSCM, but therefore the inherent advantages of a flat hierarchy have to be exploited. Employee involvement is recognized as another crucial element of GSCM. An environmentally friendly company culture is beneficial and should be derived from the companies' environmental vision and/or mission. Collaborations with suppliers are perceived to be productive and essential to develop innovative products. Other tools, like supplier questionnaires, can help to improve the environmental impact of the whole supply chain.

**Data Collection and Analysis**

Semi-structured interviews are the basis for the present research. They allow a directed discussion of the topics of interest to elicit the interviewee's ideas and opinions (Cheney, Christensen, Zorn, & Ganesh, 2004). Most questions were prepared in advance and spontaneous questions might be asked were appropriate, or to get more information on a specific topic. Easterby-Smith, Thorpe & Lowe (1991) mention five situations when semi-structured interviews are appropriate: First, when it is important to understand the construct that the interviewee builds, as a basis for the judgements and views about a specific situation. Further, when the interviewer needs to build a clear understanding of the interviewee's perception of reality and the world, influenced by the interviewer. Third, the step by step logic of a process is inexplicit. Fourth, when the discussed topic is highly confidential or commercially sensitive, and fifth, when the interviewee will not be completely open about the topic unless discussed in a face to face setting.

Due to the openness and interactivity, interview outcomes might suffer from a low reliability, as every interview is different (Cheney, et al., 2004). The aim was to bring the information level of each company onto a similar high level. Therefore some questions served as guideline for the interview (Appendix 1). The guideline questions for the semi-structured interview were derived from the reviewed literature concerning the factors for an effectively working environmental commitment of a company: Management structure, systems and decision making; Strategic and operational planning; Management of people and company culture; and relationships with supply-chain members. More

details were gathered through company documents, like reports, internal guidelines, and protocols. The interviews took place in July and August 2015 and some follow-up questions were posed in September 2015.

All interviews were audio recorded on tape and transcribed. The software package SPSS 17 from QSR International was used to support the analysis of the data. The transcribed interviews were read repeatedly and continually coded as proposed by Creswell (1994). After the coding of the material, some nodes were created and categorized following the already established framework from the literature review. The established nodes were again refined and subcategories formed. This foregoing work was the foundation of the findings section, and helped to clarify and connect the statements of the interviewees.

**Current Green Practices**

To give a better understanding about the dimensions of the environmental endeavors' in each company, this section shows the main efforts in terms of executed and continuous green practices. None of the examined firms used the term 'GSCM' for their approach. Table 1 summarizes the main green practices of each company to give an overview.

**Table 1. Overview of current green practices in each company**

| Table 5. Overview of current green practices in each company | | |
|---|---|---|
| **Company A** | **Company B** | **Company C** |
| organic products alongside conventional products | organic product alongside the other, conventional product | reducing and minimizing waste (e.g. use of whey instead of dumping / optimized use of electronic system to reduce paper usage) |
| degradable plastic bags | use of glass-bottles for the organic brand | optimizing processes(e.g. use of hot water for other purposes) |
| recyclability of panel-material attuned to recycling capabilities in India | use of biodegradable, wood-cellulose based labels | sophisticated recycling system |
| use of flax, reed, and coconut-leaves based trays | PLA- water bottle for the conventional brand | protection of natural resources through training of farmers |
| effective use of transportation | green waste is utilized, rather than land filled | own research on improving sustainable production |
| decision for more sustainable chiller-option despite cost disadvantage | - use of sustainable energy supplier - use of rainwater as grey water - transparent roofing in factory | encouragement of suppliers to be green through collaboration, procurement policies, and questionnaires |

**Strategic and Operational Planning**

This category presents all findings concerning strategic and operational planning in terms of the companies' environmental approach.

Table 2 shows at a glance which items are present in each company.

**Table 2. Comparison of strategic and operational planning**

| Table 2. Comparison of strategic and operational planning | Company A | Company B | Company C |
|---|---|---|---|
| Specific environmental guidelines from external Organizations | √ | √ | √ |
| Specific internal environmental guidelines | √ | X | √ |
| Specific environmental goals | X | X | √ |
| Economic reward for environmental practices paramount | √ | Partly | X |
| Environmental practices focused on one product /brand | √ | √ | X |
| Importance of being environmentally friendly for the general strategy | not so much | more important | very important |
| Pay-off period for environmental practices | Short | short | Middle |
| Green practices are source of competitive advantage | Partly | √ | √ |
| Key: Yes = √; No = x; In development = (√) | | | |

Figure 1; show how often financial topics were brought into context with their environmental practices by the examined companies respondents. There are three columns for each company.

The first two show the number of responses for each Respondent separately, and the third column adds these numbers to show the frequency of mention for each company.

**Figure 1. Financial incentive connected to environmental practices, frequency of mention**
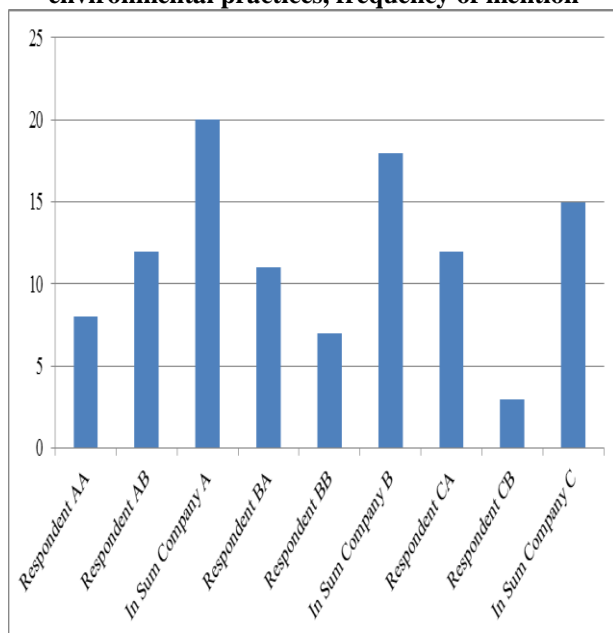


Nonetheless, Company A has practices which are not economical, have no real marketing effect, but are just ecologically rewarding. The decision for a green project is made on a case by case basis, as Respondent AB states: "…we are prepared to pay more for an environmentally friendly product, no problem. But it has to perform to the stand that is similar to the standard product." However, the company is not ready to install green practices just for the sake of the environment, as Respondent AB makes clear: "I don't think

we have, at the company, we have such strong ideological approach to the environment, that we do it anyway."

**Management Structure, Systems and Decision Making**

This section presents all findings concerning the management structure of the companies, how systems concerning environmental practices are put in place and employed, and how decisions about green practices are made. Table 7 gives an overview of the attributes of each company by way of comparison.

**Table 3. Comparison of management structure, systems, and decision making**

| Table 3. Comparison of management structure, systems, and decision making | Company A | Company B | Company C |
|---|---|---|---|
| Flat hierarchical structure | √ | √ | X |
| Ownership | Family | Public | Co-operative |
| Specific environmental framework for decision support | X | X | √ |
| Top management support perceived to be important | √ | √ | √ |
| Measurement and monitoring of environmental practice | √ | X | √ |
| Key: Yes = √; No = x; In development = (√) | | | |

**Management of People And Company Culture**

This category presents all findings concerning the management of people. This includes an examination of a possible company culture exploited for green purposes. Table 4 gives a short synopsis of the companies' properties.

**Table 4. Comparison of management of people and company culture**

| Table 8. Comparison of management of people and company culture | Company A | Company B | Company C |
|---|---|---|---|
| mission and/or vision includes environmental issues | X | √ | √ |
| strategies to ensure buy-in in environmental consciousness | X | X | √ |
| all employees aware of the company's environmental efforts | X | X | √ |
| Sustainability supporting company culture | X | √ | √ |
| Staff supposed to be important for success in environmental efforts | √ | √ | √ |
| Use of cross-functional teams | X | X | √ |
| importance of changing people's mindsets on company and private level | √ | √ | √ |
| Key: Yes = √; No = x; Partly = (√) | | | |

Similarly to Respondent AA, Respondent CB mentions not just the significance of a buy-in of staff at the company level, but also on a private level. In her view it is important that the employees are changing their course of action at home as well so they can make a difference in their communities. Her comment is: "The challenge is for them to go home, and in their community, and in their own homes, to actually practice some of the stuff, too. But that has actually become something which is not just a work driven initiative, it's

actually something that it changes their culture and mindset, it's practice which they see is just coming business as usual, and the right thing to do, and just do it by…, without thinking about it, really."

In general it was conspicuous how often Respondent CA and CB mentioned the staff in the interviews. Figure 2 is showing a bar chart, where all respondents are compared in the frequency of mentioning the staff. Respondent CB mentions again the importance of the buy-in of the employees not just on the company level, but on a private level as well.
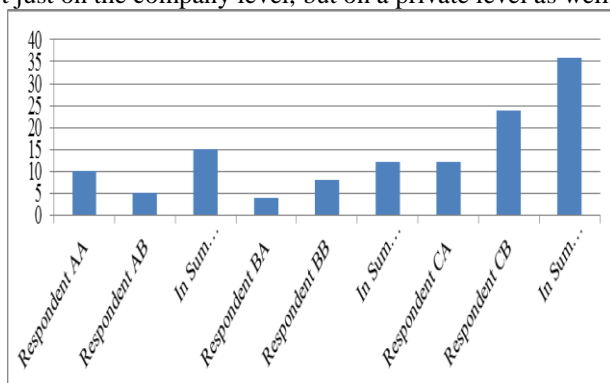


**Figure 2. Importance of employees for sustainable strategy, frequency of mention**

To sum up, Company C tries to implement a distinct and strong environmental company culture. Due to their size there is a higher necessity to organize their efforts. Therefore they have systems in place, like the link of remuneration with environmental performance, competitions, communication strategies, and they recognise the importance of the buy-in of top management.

**Relationships with Supply-Chain Members**

This section shows results about the companies' relationships with its supply-chain members which can be in both directions, further down or up the supply chain. Table 5 shows the main characteristics of these relationships in the examined companies.

**Table 5. Comparison of relationships with supply chain members**

| Table 5. Comparison of relationships with supply chain members | | | |
|---|---|---|---|
| | Company A | Company B | Company C |
| environmental guidelines for suppliers | √ | √ | √ |
| other systems, like customer questionnaires | X | X | √ |
| collaboration for environmental goals | X | Partly | Partly |
| importance of business network membership | √ | √ | √ |
| Mentioning of poor recycling infrastructure in India | √ | √ | X |
| Key: Yes = √; No = x; Partly = (√) | | | |

**Conclusions**

The research was focused on factors companies have to consider when implementing a workable GSCM approach. The research question was accordingly: What operational factors within a company's control are considered to be most important for Green Supply Chain management in Food and Beverage companies in India?

To answer this research question a theoretical framework was derived from the literature review, including the factors of: Strategic and operational planning; Management structure, systems, and decision making; Management of people and company culture; Relationships with supply-chain members.

These factors were addressed in the sub-questions of the research. To conclude, an environmental management system including consistent goals and objectives is highly recommended. The top-management has to support these goals completely and adjust their company management accordingly. Flat hierarchical structures might be of help to have a successful GSCM approach, but this is not mandatory. However, if a flat hierarchical structure exists it should be exploited as an advantage, for instance through much employee involvement. employee involvement is indeed very important for a working GSCM approach. Companies have to exploit the potentials of their employees by providing a participative environment and valuing the attainment of environmental goals. The company culture is serving as a tool to facilitate a supportive environment. The foundation of staff involvement is an environmental vision and/or mission from which all practices can be derived. Also, a collaborative approach is the most promising form of working relationships to achieve environmental goals. Companies should pursue this strategy first with suppliers where the environmental improvement would be the biggest. Other tools, for instance supplier questionnaires, are helpful to enhance their own environmental impact, and have an effect on the environmental friendliness of the whole supply-chain.

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