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Chapter

Sustainable Supply Chain through Greater Customer Engagement

Amrinder Kaur and Rinku Bhardwaj

Abstract

Climate change has a worldwide impact, and organisations have the greatest responsibility to make a difference through sustainable development as they have the resources, knowledge and reach. Sustainable supply chain in organisations is the need of the hour for holistic development as supply chain involves host of activities including resource conversion and information sharing to add value to end customer. Sustainable supply chain as a concept has evolved due to customer needs/demands as one of the driving forces. Customer engagement needs inclusion in organisations and is relatively undervalued as a tool to drive continuous improvement in supply chains. This chapter will work to build a case of greater customer engagement in supply chain management through organisational communication, interactions, opinions and feedback of customers. The study develops a case of customer engagement for sustainable supply chain through a research using a semi-structured questionnaire involving in-depth interviews with founders and decision makers in two mid-tier Indian organisations in health care and in chemical sector in India. Sustainable supply chain through customer engagement aids improved customer/stakeholder retention or loyalty resulting to economic development, positive image building, innovation and better resource utilisation.

Keywords: sustainability, supply chain management, customer engagement, customer experience, sustainable practices

1. Introduction

Efforts to combat climate change, sinking resources and increasing populations are making countries and organisations work together through series of initiatives at various levels towards a development that can be sustained [1, 2]. A decade back, Brundtland Commission report [3] highlighted the need for sustainable development for a positive impact to countries, nations and humanity as continuous development is degrading the environmental resources and essential ecological functions. Sustainable development is to develop in a way that it does not compromise with the needs and livelihoods of future generations.

World Economic Forum (WEF) report further stressed on the need for sustainable development, as the effects of climate change are visible throughout the globe. And without any concrete plan or proactive steps to combat those, the world economy is at risk [4]. And gradually, the effect of climate change is visible at all levels globally with rising sea levels, more hurricanes, flooding, droughts, extreme weather conditions that is disrupting agriculture and affecting the global industrial supply chains as well [5].
Investors and scientists are sprucing up their efforts to create a sustainable future and mitigating the effects of climate change to achieve the goals of Paris agreement through forward looking approaches which includes demanding accountability from organisations, governments and engaging to embrace sustainable practices [5].

Organisations play a wider role for a greater positive/negative impact of the initiatives as they have the knowledge and capability to create products/services that add value to various stakeholders. There is an absolute speeding up of the conscious efforts with the increasing demand from various stakeholders especially investors, customers to consider sustainable changes with limited environmental and social implication during operations and production of the product/services [5–8]. The efforts are evident as two major food and beverage organisations committed to protect and preserve fresh water resources throughout their global supply chains [5].

Also as it is reported in 2018 automotive sustainability report of UK automotive industry, organisations are embracing sustainable practices in manufacturing, remanufacturing and recycling of vehicles along with usage of components with a goal to reduce the environmental impact. The automotive organisations in UK particularly are enhancing their efforts through involvement of local communities, re-skilling and training of employees, as part of their operations and global supply chains. With more inclusive growth, these organisations are enhancing customer satisfaction as well with clarity on their core values and practices that are sustainable [8].

Sustainable development is particularly more relevant to organisations and its managers as its customers also including government, employees, etc. are demanding the need for a conscious and a sustainable way of operations and production. Thus increased efforts and solutions for healthy nutrition, green buildings, renewable energy, low carbon transportation and consumption for sustainable development go on [5].

Author like Peter Drucker noted that “If you have no customer it means you don't have any business” [9, 10]. Globalisation, increased market players, newer business models, demanding and connected customers are making it imperative for organisations to find effective means and responsible measures for greater customer engagement and advocacy.

This chapter thus works to build a case of greater customer engagement in supply chain management through organisational communication, interactions, opinions and feedback of customers. The greater customer engagement to

• Build sustainable supply chain management for a development which is sustainable.

Section 2 in the chapter is the literature review followed by research methodology in Section 3. Section 4 is the conclusion followed by limitations of research and future research directions in Section 5. The last section in the chapter is the references.

2. Literature review

In an organisation, supply chain management plays a pivotal role in adoption of sustainability-based practices as throughout its lifecycle designing, producing, packaging or transporting by connecting to various vendors account for bulk of activities before the product/services reaches the end customer. Supply chain management involves coordination and collaboration for the flow of information and resources between various channel partners, suppliers and customers themselves [7, 8, 11, 12]. Further, regulatory and stakeholder perception especially customer's
viewpoint has increasingly influenced the issues related to sustainable supply chain management. As is the case with beverage organisations and many retailers particularly wherein the demand for healthy variants, CSR and risk assessment and management of unforeseen activities make a case for adoption of sustainable practices across the supply chain [5, 13].

Sustainable supply chain management is essentially a combination of three dimensions viz. the environment, economic and social aspects or the triple bottom line involving environmental, economic and social development [14, 15]. Sustainable supply chain management is thus achieved by being responsible for environment through economic prosperity with the social upliftment and involvement of the communities and stakeholders involved. It is a collaborative effort involving all the stakeholders [16, 17].

Sustainable supply chain management is a complex concept, and as compared to earlier times when one or either two factors were focussed by the organisations, in today’s time, it is increasingly defined by the three pillars of sustainability—the environment, economic and social aspects. It can work through integration of economic aspects with complete attention and integrated effort to focus on social equity and ecological conservation [7, 16]. Sustainability is also a risk management strategy to remain locally identifiable and relevant while expanding globally through continuous improvement, effective stakeholder management with greater employee, customer engagement and retention [17–20].

Also in practice, sustainable supply chain management is a combination of green, lean and resilient ways for sustainable development. Green, lean and resilient sustainable practices include “waste elimination”, “supply chain risk management” and “cleaner production” with improved productivity. It is achieved by incorporating all the three aspects of sustainability viz. the social, economic and environmental for channel partners which could be upstream, downstream or for the organisation itself [7].

Elkington [14] exemplifies triple bottom line with activities in supply chain including effective design for reuse and recycle of resources, warehousing and inventory management. Cost savings can also be accrued through reduced packaging, health and safety cost. Sustainable supply chain management due to stakeholder engagement will also lead to improved employee, customer retention through reduced attrition costs and higher motivation, engagement levels for all stakeholders including employees, suppliers and customers.

Further, the facilitators for sustainable supply chain management in an organisation are strategy, risk management, organisational culture and transparency through greater communication and engagement with all the stakeholders especially employees or internal customers, channel partners and external customers [14].

2.1 Customer engagement in supply chain

Technologies, innovation, growth and various external factors are bringing tremendous revolution and understanding for stakeholders including customer. The literature identifies that customers are seeking an efficient use of available resources [2] and also may demand products from organisations which are produced on the principles of sustainability [7, 21–23].

Customer engagement through responsible business practices including sustainability is becoming critical for a positive growth in an organisation due to increased consumerism, competition and globalisation. Researchers and practitioners demonstrate that customer experience and enhanced satisfaction also lead to higher revenues for organisations and economic development of the communities and country in general. It is attributed to customer retention, less price sensitivity,
greater wallet share and positive word of mouth. Customer satisfaction and experience are also drivers of stock performance as customers stay with responsible and engaged organisations [24–26].

Customer loyalty and retention get enhanced with greater customer engagement and thus are important for business success. As when the customers stay with organisations, they lead to revenues or economic development. Ahi et al. [25] further highlight that “if business managers can cultivate better returns from investing in the satisfaction of their customers, investors should be able to reap similar returns”.

Leading organisations as well are acknowledging that there is direct correlation between the success of its customers and the profits, revenue and future growth. It makes an absolute case for profitability and sustainability to become synonymous with each other and to further involve practices incorporating sustainability or sustainable practices [27].

The literature identifies that global organisations are moving towards product service systems wherein the products are bundled with service for a greater customer life time value and engagement [28]. Bundling services with products are getting prioritisation and helping organisations to further improve revenues and profitability.

Customer experience management involves a strategy of customer centricity [28], wherein the organisational focus on customer completely aligns its processes, people, product, place and policies on the basis of the customer feedback. This is done by engaging the different organisational concepts, structure to customer needs and disseminating the information across all hierarchies to influence the decision-making for greater customer satisfaction [29]. In all, customer centric organisation draws customer perspective at different interaction points with the organisation to create an engaged and everlasting experience.

Customer engagement through customer feedback has also been the driving force for adoption of sustainability as a business practice for risk management and for a continuing relationship with customers. Organisations too are working to consider the impact on overall life cycle of their product and work on to build relationships which are creating advantages both for the customer and the respective organisations [24]. Supply chain leaders especially in retail increasingly understand the importance of customer experience through customer engagement in their supply chain and have been working through various measures to integrate, assimilate and gather real time data for effective supply chain deliveries. Recent research suggests that supply chain managers are working to integrate customer experience in their operations [30].

Customer engagement for greater customer experience management is becoming more and increasingly important particularly in sectors where products are commodities and the provider has little involvement with the end consumer or missing emotional connects with its customer. Customer engagement drives the customer satisfaction which is dependent on overall perception and value in use. Customer experience management begins before customers’ starts using service/product or start interacting with a brand and continues long after the engagement.

Customer engagement is important but with ever changing dynamics of customer behaviour and their demands to receive their product/service instantly with quality and efficiency, developing a good customer experience strategy is becoming tedious task [26, 31].

Research at Forrester identifies that 84% brands got good scoring or worse from the customers for their product and services [26]. Customer engagement for internal and external customer can help to enhance loyalty through value to the price
given and quality identified for the product/service across the supply chain [29]. Customer engagement for sustainable supply chain management practices will also support to build trust and brand connection for the customer leading to willingness to pay a price premium for the product and services utilised [32, 33].

Sustainable supply chain management practices will support organisations through growth, profit and innovation. Engaging with the customer helps an organisation to understand the customer's demands, perceptions, and expectations to tune in the products and services, deliveries, product design, product cycles as per demand and customer preferences for increased profits [31–36, 44].

3. Research methodology

Qualitative research is used to further understand and build a case for sustainable supply chain management through customer engagement in two mid-tier Indian organisations in health care and in chemical sector in India.

Qualitative research in social sciences involves the process of inquiry and understanding of phenomenon within their naturalistic setting. In the qualitative research, the focus is on individuals, societies, communities and their behaviours, perceptions and communication. Qualitative research is based on the assumption of understanding phenomena through subjective process of inquiry rather than the objective ones [13, 37, 38]. Qualitative research particularly focuses on “why” of a phenomenon through the process of inquiry with individuals to understand their preferences and behaviours.

This qualitative research uses case study method. Case study methodology can be used for both quantitative and qualitative researches and is done through a detailed study of the subject in their natural setting. Case study aims to understand an individual, event or phenomena and details it through its natural setting. Case study methodology utilises inductive method of inquiry by starting with questions and collecting data related to the case in context of research. The literature further identifies that case study supports in-depth exploration of an event, a problem, an institution, an individual, policy, process and so forth to understand the underlying context and perceptions of the case in focus [13, 37–39].

Case study method through interviews is an effective social science research method to provide in-depth explanations and outcomes through observations and reconstruction utilising both quantitative and qualitative data [39]. Researchers also elaborate that interviews are an effective methodology in qualitative research to provide holistic view on facts and issues in question [39].

In this qualitative research, a semi-structured questionnaire had been prepared to keep the focus on conversations and to effectively utilise the time of respondents.

For preparing the questions to gauge/understand the sustainable supply chain management practices of organisations, GRI [40, 41] factors or variables were used along with some questions on customer engagement. GRI or the global reporting initiative [40, 41] is a multi-stakeholder process, through which organisations communicate their progress and initiatives for sustainability [41–43].

GRI is an independent institution started in 1997 by the Coalition for Environmentally Responsible Economies (CERES). It became independent in 2002 and is collaborating centre of the United Nations Environment Programme (UNEP) and Global Compact [40–43]. GRI works and disseminates sustainability reporting guidelines, which are utilised by organisations to report their practices and other impacts on product/services and processes for the triple bottom line that is economic, environment and social factors/variables.
Executives of two mid-tier organisations in India were contacted and interviewed. The mode of interviews with executives and decision makers in two organisations was either through face to face or telephone. Questions had been shared in advance with majority of respondents as per their request. And then as per the preset schedule, the respondents had been contacted either through face to face or telephonic interview mode.

The revenue for two mid-tier organisations is around 10 crore (INR) for the healthcare organisation and more than 10 crore (INR) for the chemical industry. The executives were founders and decision makers involved in health care and chemical industry in India. The semi-structured questionnaire prepared was used along with the collection of verbatim of executives for making the interview sessions to be more effective.

In the healthcare industry, all the four interviews were done face to face, and in the chemical industry, 50% interviews were face to face and rest was through telephone as per the convenience of the respondents.

The data collected from the face to face and telephonic interview sessions were insights from in-depth discussion on customer engagement used for sustainable supply chain management. The demographic profiling of the respondents is shown in Table 1.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Job title</th>
<th>Number of responses (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>Founder, Managers</td>
<td>4</td>
</tr>
<tr>
<td>Chemical</td>
<td>Director, Managers</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 1. Demographic profiling for the respondents.

Every interview lasted for around 40–50 min and the key points have been summarised (Table 2).

In both the organisations, 80% of respondents agreed that customer experience and sustainability are the one of the most important arenas for them to work on. They are focussed for sustainability-based practices and would like to include customer engagement through organisational communication, interactions, opinions and feedback of customers in their operation and supply chain. Agility, innovation, flexibility and responsible practices are the key differentiators to compete in the market place today.

Majority of respondents (70%) also agreed that in spite of the focus there are numerous challenges that need newer approaches and innovative practices for greater inclusion. As per the respondents,

- Mapping of customer engagement with expectations and deliverables across the entire supply chain will need time and some innovative practices.

- Traditional metrics to measure sustainable supply chain performance are not sufficient.

- 60% of respondents believed that current technologies do not support much to inculcate customer engagement with sustainable supply chain management.

- Sustainable supply chain management will definitely need top management commitment along with processes with the customer engagement as the input.

- Aligning the teams and various partners still need work.
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<table>
<thead>
<tr>
<th>Variable/question</th>
<th>Summary of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is customer engagement for you?</td>
<td>• Managing and maintaining a relationship with customer</td>
</tr>
<tr>
<td></td>
<td>• Interacting and having a feedback from customer to keep working on</td>
</tr>
<tr>
<td></td>
<td>• A positive interaction to understand and improve</td>
</tr>
<tr>
<td></td>
<td>• Interacting and having a mutually beneficial relationship</td>
</tr>
<tr>
<td>How do you engage with your customers? A little elaboration on may be the kind of</td>
<td>Direct conversations, digital channels, and distributors</td>
</tr>
<tr>
<td>channels, etc.?</td>
<td></td>
</tr>
<tr>
<td>Is sustainable supply chain management an important criterion in your organisation?</td>
<td>Yes, it is an important criteria for both the organisations as per all the respondents</td>
</tr>
<tr>
<td>Is customer engagement an active part of your sustainable supply chain management?</td>
<td>Yes, it is an important criterion for both the organisations as per all the respondents but the mode of engaging with customer is still evolving. Both the organisations agreed that they are experimenting and learning to understand what it means for their organisation.</td>
</tr>
<tr>
<td>Where do you think, you are with respect to customer engagement for your sustainable SCM?</td>
<td>All respondents from both the organisations believed that they just started out and are evolving and learning, working to integrate a greater customer engagement in their organisation.</td>
</tr>
<tr>
<td>How do you ensure that strategic discussions about the supply chain include the implications of changing customer and consumer demands—both today and into the future?</td>
<td>Engaging with customers at regular interval to understand their needs and concerns. The engagement is through distributors and surveys which they roll out periodically. But they need to put some system in place for actively engaging to seek feedback.</td>
</tr>
<tr>
<td>How do you understand and enable the requirements regarding greater customer engagement in your supply chain?</td>
<td>• Creating agility and flexibility in the entire supply chain of products</td>
</tr>
<tr>
<td></td>
<td>• Communicating the quality and other documentation needs with the partners, suppliers and vendors</td>
</tr>
<tr>
<td></td>
<td>• Planning for contingencies</td>
</tr>
<tr>
<td></td>
<td>• Regulatory and compliance mechanism across the entire lifecycle of product</td>
</tr>
<tr>
<td>How do you think is the vendor community contributing about customer experience as a core element of the future supply chain?</td>
<td>• By working to comply with the regulatory and other compliance needs of the organisations.</td>
</tr>
<tr>
<td></td>
<td>• Working diligently to create/product and services to cater to wider needs of the respective organisations.</td>
</tr>
<tr>
<td></td>
<td>• Innovating to cater and for the ease of the respective client organisation</td>
</tr>
</tbody>
</table>

Can you please help us understand how customer engagement particularly is affecting three (economic, environment and social factors) of supply chain management for your organisation

<table>
<thead>
<tr>
<th>Economic factors</th>
<th>Summary of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic factors</td>
<td>• The respondents of chemical organisation give lot of diligence to understand and evaluate if their vendors are economically sustainable, have healthy balance sheets and have good market presence. It is a part of their risk assessment.</td>
</tr>
<tr>
<td>Economic factors</td>
<td>• The respondents from healthcare organisation elaborated that they do not focus much on economic viability and sustainability of their vendors. Majority of respondents in both the organisations believe that cost and margins are important in their business and decisions are driven by it.</td>
</tr>
</tbody>
</table>
### 4. Conclusion

Sustainable development is getting more prominence in today’s time with changing dynamics in businesses, and it is further amplified by shrinking resources, increasing population, global risk management and greater stakeholder interest.
and activism. Government, customers, investors, partners and so forth seek more responsible organisations that are transparent with their policies and practices.

Globally, organisations particularly are working on long-term strategies, practices to inculcate sustainable practices in their processes, product/services throughout the complete product life cycle including supply chain as well. Stakeholder particularly customer engagement can lead to amplification of practices, methodologies and innovation for more responsible practices for an inclusive growth. More so sustainable supply chain management practices will lead to more responsible behaviour and greater stakeholder engagement for the businesses as well.

The research involving two mid-tier organisations works to understand how customer engagement is contributing to sustainable supply chain management. Qualitative research through interviews with decision makers in two case organisations maps the challenges they face and the current focus of the management and decision makers.

In both the organisations, inclusion of customer engagement and sustainable supply chain management practices is at a nascent stage. Decision makers understand the relevance of sustainable supply chain practices and customer experience/engagement but are struggling with legacies of cost and margins, as these are still important parameters to drive success. The two case organisations are evolving processes, systems and culture for sustainable development through greater customer engagement.

- Innovation and work towards methodologies and inclusive practices can help to capture customer feedback, opinions about products and services to further inculcate sustainable practices across the entire supply chain/customer life cycle

- Review and identification of metrics and measures can support to track and monitor the performance around sustainable supply chain management practices through customer engagement.

- Investment and innovative solutions through technology as per current needs and requirements will aid sustainable supply chain management. The processes and practices can support to provide holistic view of supply chain.

- Commitment across the board is to be driven through cultural shift initiatives. Leadership commitment will ensure that there is right context provided to entire organisation.

- Reengineering of existing processes with alignment of all stakeholders/teams can enhance the efforts to adapt sustainability-based practices.

Sustainable supply chain management practices are important for the continuous success of business, communities and countries. Customer engagement can play an important part to enhance the sustainable supply chain management practices. Sustainability cannot be handled in segregated manner and has to be part of operations and decision-making throughout the entire lifecycle with integrated supply chain, and customer engagement can be a driver to create the change needed which will be success for the business and customers all along.

5. Limitations of research and future research directions

This chapter is a qualitative exploratory research to create a case for sustainable supply chain management practices through customer engagement. Researchers can
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further develop the work wherein quantitatively the effect of customer engagement on supply chain management practices could be measured for greater inclusion. Researchers can also identify the causes through appropriate hypothesis to support/understand sustainable supply chain management practices for the aid of practitioners through customer engagement.

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