

Study of Quality in Supply Chain on Indian Cement Industries In Pune

Athulo Mepo

D.Y Patil College of Engineering

Abstract- Supply chain management has become essential for today's business success. In this paper, I present quality in supply chain management in Indian cement industries located in pune, and some direction to improve Quality Management using SWOT analysis.

It is important to identify the ways to maximize the value within the supply chain. Cement industries are the core manufacturing sector affecting the global growth. The cement industries in India are imbibing the supply chain management concepts and tools to mitigate the competition which is being tougher day by day. Our goal in this paper is to capture the best practices in supply chain management in Indian cement industries. The methodology adopted in this study is the idea drafted followed by reviewing research literatures. Qualitative data collection techniques were used. These data were analyzed using SWOT analysis. The outcomes of the analysis are the peculiar features of the practice of Supply Chain Management in the Indian cement industry.

I. INTRODUCTION

Supply chain management (SCM) is the management of network of the businesses which are interconnected and involved in the delivery of various products and services to the customers. Supply Chain Management includes movements and storage of raw materials, work-in-process and finished inventory from production to its consumption. The term supply chain management came into widespread use in 1990s. Prior to that time, we were using terms such as logistics and operations management. According to "Supply Chain integrates the key business processes of an organization from end user through original suppliers that provides products, services and information that add value for customers and other Stake holders.

Quality management is defined as any approach used to achieve and sustain a high quality output by conforming to requirements and meeting customer satisfaction. Various quality management methods are implemented by any organization through different routes with same goal in mind – to increase system quality and thereby decrease overall costs.

This study focuses on study of quality in Supply Chain on Indian cement industries. Supply chain management is the management of network of the businesses which are interconnected and involved in the delivery of various products.

A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products and the distribution of this finished products to customers. Supply chain exists in both service and manufacturing organizations, although the complexity of chain may vary greatly from industry to industry and firm to firm." The supply chain includes all activities associated with the flow and transformation of goods from the raw materials stage, through to the end user. It also includes the associated information flows. Supply chain management is the integration of all these activities through improved supply chain relationships, to achieve a competitive advantage. The cement industries are playing vital role in the economic and social development of the countries.

The Indian cement industries chosen for this study are good cement industries in Pune. They are foremost manufacturer of cement and concrete. Its operations are spread throughout the state and a many distribution network of dealers.

1.2 Objective of the study:

- To identify the good practices carried out in the cement industry.
- To find out limitation of Supply chain Management in the cement industry
- To remove the identified limitation for the company.
- To modify the identified weaknesses to improve the quality of supply chain.

1.3Need for study:

This study focuses on how an Indian cement industry has implemented supply chain systems; strategy and technology to effectively manage its supply chain operation.

The objective of the present work includes the study and analysis the supply chain management Practices in an Indian cement industry. A SWOT Analysis has been conducted to find out strength and weaknesses of the SCM Practices of this company.

II. REVIEW OF LITERATURE

This chapter will give a brief background of the traditional Quality management techniques. Total Quality Management is a revolutionary approach to effective management. In recent years the supply chain has evolved as a frequent topic in management, logistics and manufacturing literature. A constantly changing business environment is forcing companies to look for new ways to achieve and sustain competitive advantage. The wider availability of goods and services has led to increasing customer requirements, need for quality and demand. Scenarios are moving in turbulent economic environment, firms are striving for ways to achieve competitive advantage. One of the approaches is to manage the entire supply chain to reduce costs and improve performance to create competitive advantage and business success. Supply chains have become now the focused area for business performance of manufacturing and service organizations. This includes managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, distribution across all channels, and delivery to the customer(1)

According to the Council of Supply Chain Management Professionals (CSCMP), Supply chain management encompasses the planning and management of all activities involved in sourcing, procurement, conversion, and logistics management. It also includes the crucial components of coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies.

Many firms nowadays are using their supply chains as competitive weapons and a central element of the strategic management process. It is also important to examine the influence of a culture of competitiveness and knowledge development on supply chain performance in changing and varied market conditions. There should be a sufficient knowledge development on the supply chain in a firm since it can be advantages handling the competition. A culture of competition is prevailing due to affluent available knowledge resources on a particular area of focus. Therefore synergies exist between a culture of competitiveness and knowledge development. For those firms whose managers are unlikely to

be able to predict the turbulence in the business they will face over time, a focus on both a culture of competitiveness and knowledge development is critical to ensuring success(2).

The focus of supply chain management (SCM) has shifted from production efficiency to customer-driven and partnership synchronization approaches. To implement this strategic shift requires high-level collaboration between supply chain partners. A supply chain is a dynamic process and involves the constant flow of information, materials, and funds across multiple functional areas both within and between chain members (3).

In order to ensure the uninterrupted supply of items, it has been observed that more than one supplier or vendor is normally available for each item. Periodic evaluation of supplier quality is carried out to ensure the meeting of relevant quality standards for all incoming items. One also needs to consider many other factors with the aim of developing a long-term supplier relationship. With the increase in use of quality management and Just-in-Time concepts by a wide range of firms, the supplier selection decision has become even more critical (4).

As customers' demands are always uncertain, manufacturers tend to manage their suppliers in different ways leading to a supplier-supplier development, supplier evaluation, supplier selection, supplier association, supplier coordination, etc. (5)(6). There is also an increasing awareness towards the requirement of sustainable development in the area of supply chain management. The companies nowadays are moving ahead and striving for sustainability and Environment.

Literatures have recognized the importance of explicitly addressing sustainability issues in supply chain and operations management in recent pasts. However, there is a lack of systematic integration of the environmental and social component of sustainability in addressing supply chain and operations management issues. Efforts to make supply chains more environmentally friendly have gained top most priority due to increasing threats arising out of phenomena like global warming and climate change(7).

The businesses are being executed now on computers and internet. The E-Procurement is being popularized and it is essentially an Internet/Intranet based purchasing application or hosted services that streamlines buying trading partners, maximizes trade efficiency across the entire supply chain, and provide strategic e-commerce capabilities in real time. E-procurement has become popular due to real time transaction of data information and fund at the same time convenient

mode of communication. On other hand ERP, the enterprise resource planning has gained momentum. Information integration is a key benefit of Enterprise System. Improvements in operational integration enabled by enterprise resource planning can affect the entire organization and therefore can positively impact firm performance and direct benefits to the area of supply chain management systems thereby more sophisticated planning capabilities. Enterprise resource planning systems replace complex and sometimes manual interfaces between different systems with standardized, cross-functional transaction automation. Order cycle times (the time from when an order is placed until the product or service is delivered) can be reduced, resulting in improved throughput, customer response times, and delivery speeds (8) (9).

An enterprise resource planning system exhibits the system to replace complex and manual communications between the systems with standardized, cross functional operations in order to set the effectiveness in the process and to allow a user friendly platform. Quality in the supply chain will remain prominent criteria for the evaluation of the supply chain practices. Dubey and Chakraborty (10) have mentioned in their current research work that innovative practices in supply chain in combination with TQM (Total Quality Management) can help firm to reduce cost and improve customer satisfaction which in turn reflect high profitability and better market share. On other hand the evaluation of supply chain should be based on some relevant criteria. The criteria for evaluation should be carefully selected and these criteria should be both financial and non-financial. One important aspect which can be mentioned here is that, evaluation methods that rely only on financial criteria are not well suited for newer generation of supply chain management applications. Hence, the method using both financial and non-financial criteria may be the best choice for the evaluation of the supply chain practices. Also, it may be appropriate to use a balanced approach to measure and evaluate supply chains.

The supply chain management has gained momentum and has become an essential tool for the success of the business. The industries cannot be imagined without the structured supply chain. The competition has forced companies to explore everywhere and in any area which were earlier considered less significant. One of the similar areas is supply chain management which has become the turning stone for competitors.

III. RESEARCH METHODOLOGY

3.1General:

Every project must follow a method to carry out the work systematically. In this project initially the literature on Total Quality Management is studied and problems associated with it are known. The methodology adopted for this study is the idea drafted followed by reviewing research literatures. Qualitative data collection techniques were used. Qualitative research is a field of inquiry, which crosscuts disciplines and subject matters. Meanwhile, qualitative aims to obtain an in-depth understanding of human behavior and the reasons that govern human behavior. Qualitative method produces information only on the particular cases and any more general conclusion are only propositions. Qualitative method is further divided in Primary source and Secondary source.

After the data collection the data will be analyzed by SWOT analysis in context of Strengths, Weakness, Opportunity, and Threat. Method of data collection is explained in the flow chart given below in the Figure. The required data will be collected using both primary sources and secondary Sources. Interview technique is used for primary data while secondary data is collected through available published materials in the library and internet. The primary data is collected by means of personal interviews. A set of questions is prepared for the personal interview consisting of questions that meet the objectives of the practices in supply chain management for the cement industry.

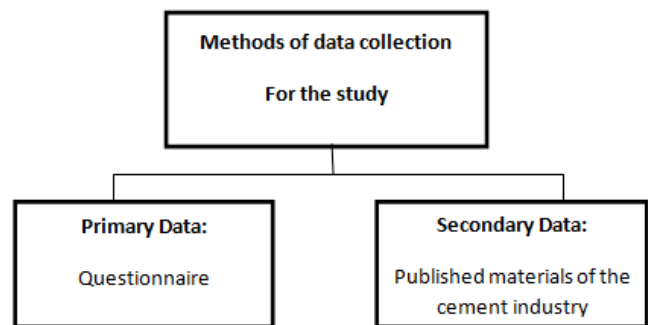


Figure: methods for SWOT analysis.

After the questionnaire is being provided to the company, they will provide data required for this project. From these data will then be divided into four parts:

- Strength
- Weaknesses
- Opportunities
- Threats

From these data first two objectives will be satisfied for finding strengths and weaknesses for the third objective to try and remove these identified weaknesses corrective actions

will be prepared and best solution from these, alternates will be provided which if implemented will result in better quality of supply chain management.

3.2 Demography of the Respondents:

A wide hierarchy of organizational structure of supply chain management covering almost all the stakeholder departments affecting the SCM operations, logistics and distribution, project implementation group, central dispatch section, inventory, environment, etc. will be contacted and interviewed either personally or by mail. Then their replies will be received and further clarification and supplementary information considered to be necessary will be secured.

SWOT Analysis:

SWOT analysis can be used for the result and the product analysis. Many cement industries in past years have used SWOT analysis for customer satisfaction. Strengths and weaknesses are often internal to your organization, while opportunities and threats generally relate to external factors. SWOT analysis is commonly used to assist in identifying strategic direction for an organization or practice. It encompasses both internal (strength and weaknesses) and external (opportunities and threats) environment.

A SWOT analysis generates information that is helpful in matching an organization or a group goal, programmed, and capacities to the social environment in which they operate. It is preferred for the present work as it yields useful information about the viability of the considered system.



The SWOT analysis was used to analysis the data collected in the present study. This SWOT analysis brings out some of peculiar features of the practices of supply chain management in the cement industry.

Strengths

Strength is considered as a positive internal characteristic of an organization, whether intangible or tangible. It is that attribute that is within the control of the

business organization. A business that uses an effective SWOT analysis must know its strengths. Such knowledge is obtained through the business determining what it does exceptionally well and the resources the business owns. For instance, strength can be skills and reputation of workers, assets of the firm, the advantages that the firm enjoys over its competitors, and the general attributes that extend competitive advantage to the firm.

Weaknesses

Weaknesses are described as a firm's internal attributes which are negative in nature and are responsible for denying an enterprise a competitive advantage over the other firms. In order to favorably compete in the market, a business must improve these negative aspects. Stanley argues that a firm might require identifying the factors that deter it from gaining competitive advantage. Further, it may require understanding the vital elements that would be lacking in comparison to its competitors and determining whether the business is located in a strategic place in the market.

Opportunities

External and attractive elements which give hints on expected prosperity of a business enterprise are its opportunities. These positive elements can be detected by way of identifying the attractive factors that a business can benefit from in the market. In addition, external factors for any form of growth in the market are part of opportunities.

Threats

Threats are external factors that an enterprise has no control over, which have the negative ability of putting the business or its strategic plans at risk of failure. The only benefit that threats offer businesses is the fact that success can be realized by responding to threats with effective problem-solving and planning. Threats are seen as the strong competitors in the market and are factors that reduce the profits of a business. Further, the introduction of new goods or services that tend to make the products of a business less popular in the market can be treated as a threat.

3.3 Conclusion:

In the above topic the methodology for research and various steps are explained at the same time reasons for selecting those tools are mentioned.

IV. CONCLUSION

An effective SWOT analysis helps a cement company to give emphasis to its strengths, improve on weaknesses take advantage of the opportunities present and avoid threats. This analysis is vital in the formulation of business strategies that majorly work towards achieving competitive advantage in the market through understanding of the internal and external factors within the structure of competitors.

The objective of this study is to investigate supply chain management practices in an Indian cement manufacturing firm. The key learning of the study suggest that there is a bunch of supply chain management good practices exists in the Indian cement industry. This work may be carried out for other cement manufacturing organization.

4.1 remaining work for stage 2:

- SWOT analysis for the chosen industries will be done from the questionnaire and discussions.
- By this analysis strengths and weaknesses will be identified and addition external forces such as opportunities and threads will also be known and with help of these properties, the negative qualities such as weaknesses and threads would be removed in further work.

REFERENCES

[1] Stock & Lambert. “Strategic Logistics Management”, 2001.4th Edition.Boston, Irwin / McGraw-Hill.

[2] R P Mohanty and S G Deshmukh. A text book on “Supply chain management: Theory and Practices”, 2004. Pages 42-43.

[3] Supply Chain Council. “Basics of supply chain management”, CPIM certification review course, participant guide, 2001. Version 2.1, Alexandria, VA: APICS, the education society of resources management.

[4] G T Hult, D J Ketchen and M Arrfelt. Strategic supply chain management: Improving performance through a culture of competitiveness and knowledge development. Strategic Management Journal, 2007. 28: 1035-1052.

[5] V Jain, S Wadhwa, S G Deshmukh. ‘Select supplier-related issues in modelling a dynamic supply chain: potential, challenges and direction for future research’, International Journal of Production Research, 2009. Vol. 47, No. 11, Pages 3013–3039.

[6] C Muralidharan, S P Anantharaman, S G Deshmukh. A multicriteria group decision making model for supplier rating. The Journal of Supply Chain Management, 2002. 38 (4), 22–35.

[7] FTS Chan. Interactive selection model for supplier selection process: an analytical hierarchy process

approach. International Journal of Production Research, 2003. 41 (15), 3549–3579.

[8] S J Deng, W Elmaghraby. Supplier selection via tournaments.Production and Operations Management, 2005. 14 (2), 252–267.

[9] A C Shukla, S G Deshmukh, A Kanda. ‘Flexibility and Sustainability of supply chains: Are they together?’ Global Journal of Flexible Systems Management, 2010. Vol.11, Nos.1 & 2, pp 25-38

[10]M Cotteleer, E Bendol. Order lead-time improvement following enterprise-IT implementation: an empirical study. MIS Quarterly, 2006. Vol 30 (3).

[11]McAfee. The impact of enterprise information technology adoption on operational performance: an empirical investigation. Production and Operations Management, 2002. 11 (1), 33–53.

Appendix.1

Questionnaire:

Sr.no	Questions	exe	good	Avg.	poor
1.	What is the customer demand for your brand as compared to other competitors in the market?				
2.	What are the customer's perception and satisfaction level about your brand in comparison to other leading brands?				
3.	How is the bag quality of your cement compared to the other leading brands situated here?				
4.	How is the sales promotion support by the company in comparison to other leading brands?				
5.	How is the presale promotion support by the company in comparison to the other cement companies?				
6.	How is the incentive strategy to the dealers and sub dealers of your company in and outside of office compared to the other leading brands?				
7.	What level is the pricing strategy of your cement in comparison to other leading brands?				
8.	How the transportation facility for the cement industry in is compared to the other brands?				
9.	How is the coordination and motivation of dealers in the company?				
10.	How secure is your financial position?				
11.	What is the level of competition among the local manufacturing companies?				
12.	The relation with your clients?				

1. What are your main achievements over the last three years?
2. What are the threats precautions that your companies provide for the proper delivery of cement?
3. How successful have you been in achieving your strategic objectives?
4. Do you use any kind of tracking device to track the cement bags? If so what are they?

5. Do you use RFID for tracking the bags of cement while transportation and delivery?
6. Have you met or exceeded your targets?
7. Do your current services meet users' requirements?
8. How effective are your links with other key manufacturers in your area or sector?
9. How secure is your financial position?
10. Do you have the staff/volunteer levels and expertise necessary to meet your objectives?
11. How is your company regarded externally? Does it have a good reputation? Are you able to build effective relationships with those you wish to influence? Do you have a positive relationship with your funders/supporters?
12. Is your organization effective at communicating with external groups?
13. How effective are your management systems and processes? Is your company well-structured and efficient?
14. Does your Management Committee have the capacity/expertise to meet the demands of the organization?
15. What are the key opportunities and threats facing your company? You may wish to consider, for example:
16. Trends in your area of work/services?
17. Competition from other or similar organizations in your area?
18. Facilities and incentives provided to the workers?
19. Barriers to your company's development?
20. Opportunities for developing new area of work
21. Opportunities for extending services to new audiences
22. What is the weaknesses that need to be looked upon?
23. Do you offer any kind of schemes and offers to the local dealers around? If so share some.