



7. Implementation of a Horizontal Supply Chain Model for MSME Vendors-A Case Study

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ABSTRACT

Over the past decade, India has emerged as one of the largest and fastest growing markets in the Automobile industry. In 2020, India emerged as the fifth-largest automotive market with around 3.5 million units combined sold in the passenger and commercial vehicles' categories. One of the most important challenges presently faced by the Auto sector is in the area of Supply chain. A number of Automotive OEM's rely heavily on the Tier1 and Tier 2 suppliers for their components and Sub Systems. Their contribution is vital for the success of these large companies towards achieving the goals of High Quality, Reliability and reduced costs of products and services.

Over the year, we have studied more than thirty such MSME companies who are in the automotive sector. The expectation from these MSME Companies are efficiency in product costs with no compromising Quality and delivery commitments. This Case study pertains to an important arm of the activity of large OEM enterprise with regard to their needs and challenges for Efficient supply Chain Management. The results of the study from the various studied parameters brought out interesting factors. The confidence that the vendors are treated as Partners in the Development cycle has created a very positive vibe in the relationship. A very transparent system of interaction and Objective evaluation Matrix ensured elimination of perception of bias in the system. Since the suppliers are part of the full cycle involvement right from initiation their understanding of the Requirement definition was high. With early supplier involvement, the developmental cycle time got significantly reduced and the various bottle necks were eliminated in time for smooth delivery of the products.

KEYWORDS

Supply Chain Management, MSME in Automotive Supply Chain, Supply Chain Integration, Efficient Supply Chain Process, Vertical Supply Chain, Distributed Model of Outsourcing.

1. Introductions:

Over the past decade, India has emerged as one of the largest and fastest growing markets in the auto sector. This Case study pertains to an important arm of the activity of large OEM enterprise with regard to their needs and challenges for Efficient supply Chain Management. While the MSME's are the back bone of these companies' product and services, the most critical decision relate to their strategy for Supply Chain Integration with the main objective of optimizing the overall performance of the Supply chain industry. In 2020, India emerged as the fifth-largest automotive market with around 3.5 million units combined sold in the passenger and commercial vehicles' categories. It was the seventh-largest manufacturer of commercial vehicles in 2019. Many multinationals are looking at India as a major manufacturing and export hub. Indian brands like Tata Motors, Mahindra and Mahindra, Hero MotoCorp and Bajaj Auto are expanding their operations within India and across the rest of the world.

India has a distinct advantage of being one of the leaders in sectors like light passenger and commercial vehicles, two-wheelers and automotive components. Due to exposure to world-class manufacturing and collaborations with world leaders, the Indian automobile industry is witnessing greater thrust in Research and Development and Supply chains within the country. This has created great opportunities for the MSME sector to be carryout innovative products, components and technologies for this sector.

Problem statement:

One of the most important challenges presently faced by the Auto sector is in the area of Supply chain. A number of Automotive OEM's rely heavily on the Tier 1 and Tier 2 suppliers for their components and Sub Systems. Their contribution is vital for the success of these large companies towards achieving the goals of High Quality, Reliability and reduced costs of products and services. The recent amendments by the Govt of India towards MSME Companies has provided a larger canvass of operational penetration and financial support to MSME Companies.

Over the last year, we have studied more than thirty such MSME companies who are in the automotive sector. The expectation from these MSME Companies are efficiency in product costs with no compromising Quality and delivery commitments. Being small, they are able to make fast business decisions. They are also highly adaptable to technological challenges in a continuously changing market condition. The spirit of Entrepreneurship and flexibility are other added assets. Since they typically supply their products and services to multiple customers, they are able to manage cost efficiency Therefore they continue to be a force to recon with.

This Case study pertains to an important arm of the activity of large OEM enterprise with regard to their needs and challenges for Efficient supply Chain Management. While the MSME's are the backbone of these company's products and services, the most critical decision relate to their strategy for Supply Chain Integration with the main objective of optimizing the overall performance of the Supply chain. Two modus operandi are commonly prevalent in the Supply chain arena- Vertical integration of their Supply chain activities with major Critical components and systems manufactured in House and a

Horizontal Integration model wherein a few Quality vendors are selected after appropriate due diligence and involve them as Partners in the Development Cycle.

A Supply chain encompasses a full spectrum of activities and functions which include Design, fabrication, distribution and support. An integrated supply chain can thus be defined as an association of customers and suppliers who work together to optimize their collective performance in the creation, distribution, and support of an end product. The objective of integration is to focus and coordinate the relevant resources of each participant on the needs of the supply chain. Figure 7.1 presents the Structure of a typical Supply Chain.

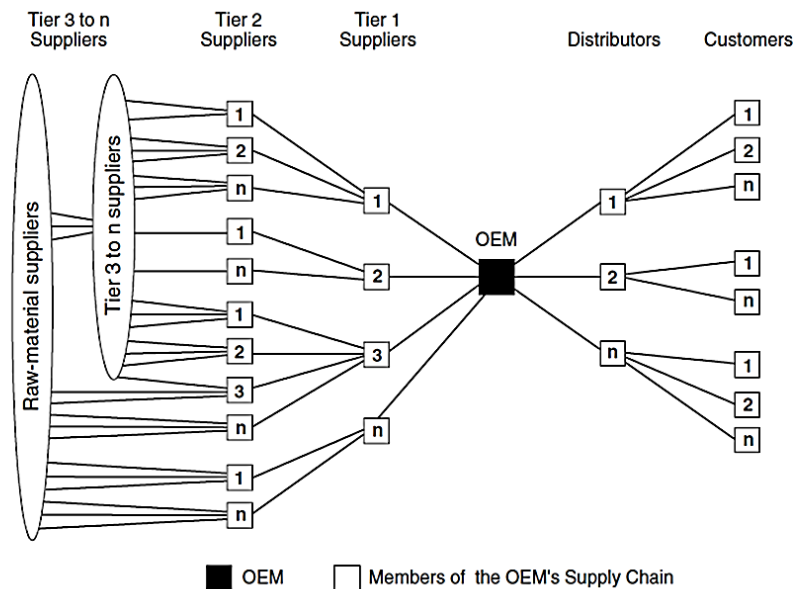


Figure 7.1: Structure of Typical Supply Chain. Source: Adapted From Lambert et al. 1998.

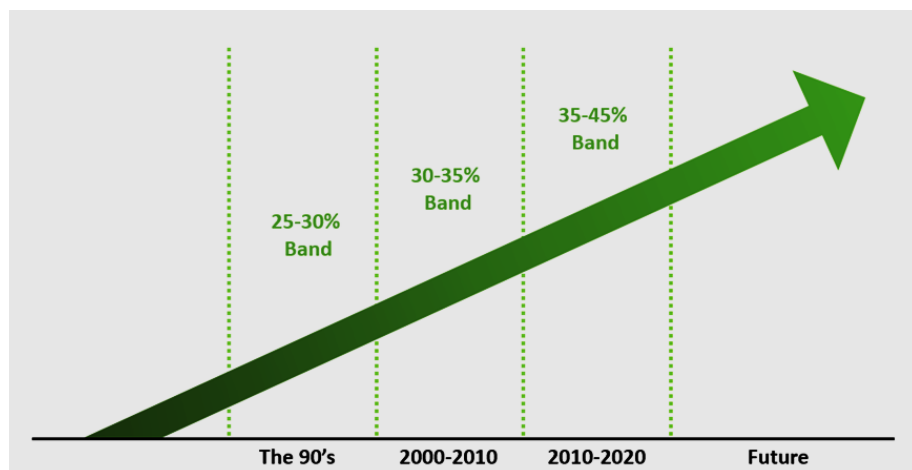


Figure 7.2: Automotive Sub Contracting Trends – Typical data from Indian OEM's.

Case Study:

With the ultimate objective of evolving appropriate strategies to be adapted by a Tier I suppliers towards their Automotive OEM for its Supply Chain management opting a high level of outsourcing for its Components and System, the Vertically integrated Supply Chain model as well as the horizontal model has been studied. The OEM Company had more than six locations in India and has eight major Sub assembly Sub contractors and around 32 Suppliers for various components forming part of its nearly Million Large System assemblies per Annum. With the objective of reducing the Supply chain vendor to an optimum and manageable level, we undertook an exhaustive exercise of analyzing its existing vertically integrated model and look for alternate solutions.

As part of this exercise, it was ensured that various factors of its existing supply chain vendors which include Supplier history, Quality, Reliability and other important factors were scrutinized carefully. Close interaction with the chosen vendors were held to buy in their services and the benefits that will accrue to them such as larger volume sales, long term supply assurance, market based dynamic pricing etc.

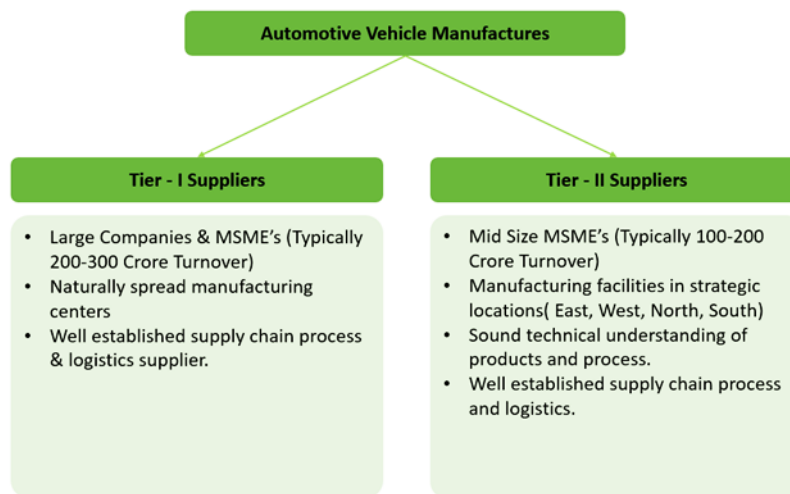


Figure 7.3: Typical Supply Chain OEM's Contracting Aspirations.

All the existing and a few potential new Supply chain vendors were involved and were briefed clearly, spelling out the needs, aspirations and criteria to be met for selection. They were all given a time frame of six months' trial period. At the end of the exercise a transparent system of evaluation and selection was undertaken. A few vendors who were in the border line of selection were given further time to compete. The emphasis is to ensure that there is a mutual understanding between the Company and the supplier.

Results and Analysis:

The results of the study from the various parameters brought out interesting factors. The confidence that the vendors are treated as Partners in the Development cycle has created a very positive vibe in the relationship. A very transparent system of interaction and Objective

evaluation Matrix ensured elimination of perception of bias in the system. Since the suppliers are part of the full cycle involvement right from initiation of their understanding of the Requirement definition was high. With early supplier involvement, the developmental cycle time got significantly reduced and the various bottle necks were eliminated in time for smooth delivery of the products.

As there is a long term commitment and assured contractual obligation, the vendors also invested in the product development cycle by revamping their Machineries and Project Execution process. Creating a design to Delivery Common platform strategy, the OEM's standardize the Design of Hardware, software and the associated IT Systems towards seamless integration with vendors for exchange of Data and information. Logistics, including Shipping and Transportation has also been negotiated with reliable contractors which resulted in reduced cost and timely deliveries.

It is important to emphasize that the success of the ultimate exercise is due to close interaction and Drive by a Top down approach, with total Management support both from OEM and vendor side. The entire exercise was supervised and monitored throughout the Study phase on a weekly basis by a committee of representatives from all Departments. Virtual Review meetings facilitated quick resolution of issues.

During the discussion with vendors, various issues that the Vendors faced were openly discussed. They expressed their financial funding mobilization issues and associated constraints. Helping a lending hand, the Company negotiated and facilitated upfront financial assistance from various funding agencies, sometimes providing Bank guarantees and Bill discounting against invoices.

Yet another advantage was the Partnership approach facilitated significant contribution to new ideas as there is a vast expertise and experience with the vendor companies. They were encouraged to provide their inputs to the Research and Development activities of the parent company, present and future.

We have also carried out a study between the traditional Vertically Integrated Supply Chain System and this new concept of Vendor as a Partner System. It points out to various complex parameters with significant interplay. A thorough examination of the Process leads to a positive inclination to the present strategy for Small and Medium enterprises. While Large Corporations have the wherewithal for financial strength and stability, smaller companies need mutual hand holding and cooperative approach. Present day challenges faced by Automotive Companies and its suppliers need the long-term sustainability assurances for their survival. They also need OEM support for installing and implementing latest IT based Technologies. All this point out to the imperative need to be ready for the business challenges and approach to a successful execution of Supply chain. The Supply chain vendors get sustainable competitive advantage or committed Outsourcing which is a great Plus of the Present system.

Despite these benefits, OEMs may elect to retain certain aspects of vertical integration, keeping in mind their critical needs for ultimate product delivery. It takes away the fears of the Business Survival in the medium and long term which in turn allows them to focus on the three important aspects of Quality, Product cost and Timely Supply.

Conclusion:

In contrast to the Vertically Integrated Supply Chain model wherein the automotive manufacturers have a major portion of manufacturing in-house, the Distributed Supply Chain model studied herein offers significant advantages. The results of the study from the various parameters brought out interesting factors. The confidence that the vendors are treated as Partners in the Development cycle has created a very positive vibe in the relationship since the suppliers are part of the full cycle involvement right from initiation, their understanding of the Requirement definition was high. With early supplier involvement, the developmental cycle time got significantly reduced and the various bottle necks were eliminated in time for smooth delivery of the products. Yet another advantage was the Partnership approach facilitated significant contribution to new ideas as there is a vast expertise and experience with the vendor companies. Therefore, the studies recommend the Horizontal Supply Chain model over the vertically integrated Approach.

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