

SUPPLY CHAIN DECISIVENESS IN INDIAN AUTO SECTOR**Dr Dharamvir Mangal***

ABSTRACT

Supply chain management has increasingly become an inevitable challenge to most companies to be continuously survived and prospered in the global chain-based competitive environment. The current challenges of the Indian automotive world, their implications on supply chain are summarized and analyzed in this paper. In this competitive era of 'LPG' i.e. Liberalization, Privatization and Globalization, modern marketing systems, introduction of products with short life cycles, and the discriminating expectations of customers have enforced business enterprises to invest in and focus attention on their Supply Chains (SCs) in order to meet out the level of customer's satisfaction and to survive in the competitive market. In fact, many of trends in the auto industry are reinforcing the need to redefine supply chain strategies layouts, and operations etc. Many manufacturing operations are designed to maximize throughput and lower costs with modest considerations for the crash on inventory levels and distribution capabilities. To improve profitability and efficiency, automotive players are seeking ways to achieve operational excellence, reduce operating cost and enhance customer service through efficient supply chain management.

Keywords: *Automotive Industry, Supply chain, Challenges, market potential*

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1. INTRODUCTION

The most important perspective of modern business management is that individual businesses no longer compete as only autonomous entities, but rather within supply chains [13]. In this emerging competitive environment of the twenty first century, the ultimate success of the business will depend on management's ability to integrate the company's intricate network of business relationships. The term supply chain management refers to cooperative management of materials and information flows between supply chain partners, to reach goals that cannot be achieved acting individually [10]. The purpose of supply chain management is to improve trust and collaboration among supply chain partners, thus improving inventory visibility and the velocity of inventory movement [5]. Emergence of new technologies and the ever-increasing intensity of competition are forcing organizations, firms and industries to reexamine how they do business, meet new customer-driven challenges, companies are re-thinking, restructuring and re-investing their supply chains in order to survive, succeed, excel and even in some specific cases targeting to spearheading competitiveness [9]. Facing more demanding consumers, every chain member has to figure out how to increase flexibility so as to sustain good customer service while controlling or even better decreasing relevant costs from an entire chain standpoint. Indian Automotive industry has been facing major challenges due to fierce competition, increasing operational complexity, technology changes, shortened product lifecycle and frequently changing customer needs. Despite high stocks, the performance of the supply chain has failed to meet customer expectations in terms of delivering the exact specification desired within an acceptable timescale. Today Indian automotive industry is completely capable of producing various kinds of vehicles and can be divided into three broad categories: two-wheelers, cars and heavy vehicles. Vast scope exists for Indian automobile and auto component manufacturers to reduce their logistics costs with the implementation of SCM solutions. As India is a developing country, and fascinatingly, there has been an upward trend of realization of supply chain optimization. SCM solution market has been making inroads in India and it is being established widely by many automobile industries in the country, particularly manufacturing ones where inventory carrying cost is very high. Several automobile manufacturers in India have taken positive actions to manage their logistics cost and get better customer services and measures have been undertaken by Indian companies to develop their supply chain [12]. Total turnover of the Indian automobile industry is expected to grow from USD 34 Billion in 2006 to USD 122 Billion in 2016 [16]. The automotive industry is today a key sector of the Indian economy

and a major foreign exchange earner for the country. Today, India is the 2nd largest tractor and 5th largest commercial vehicle manufacturer in the world. Hero Honda with 3.9 million motorcycles a year is now the largest motorcycle manufacturer in the world. With the growth of transportation system the automotive industry of India is also growing at rapid speed, occupying a vital place on the 'canvases of Indian economy. By exploring Indian automobile sector, it has been found that uncertainties like demand and lead-time have direct impact on managing inventories and managers are facing great difficulties while controlling these parameters [17]. Customer satisfaction and cost reduction are again the key issues to be handled effectively and efficiently. To improve profitability and efficiency, automotive players are seeking ways to achieve operational excellence, reduce operating cost and enhance customer service through efficient supply chain management. Efficient and effective supply chain management plays a very important role in the auto industry. The automotive industry is changing its business model with innovative supply chain to reduce cost, create customer buying experience and quality. Mahindra & Mahindra has implemented one of the most efficient supply chain systems in use by Dealers today, though it still stands room for improvement. The regulatory factors that can stimulate competitiveness of any firm if they are effectively taken care of during the due process of supply chain are: Decision phases, Performance, Drivers and obstacles, Network Designing, Managing & planning inventories, Managing uncertainties, Sourcing, transporting and pricing products, Coordination and technology. Nowadays, a considerable number of companies like Maruti Udyog Ltd., Mahindra and Mahindra, Dell and HP etc. are implementing supply chain management practices. Many of them are striving hard for spearheading competitiveness in their respective sphere through cross-functional collaboration, both within the enterprise and supply chain partners.

1.1 Tribulations in a Supply Chain

The very concept of supply chain management has its own drawbacks to be addressed. The following problems are some of the burning issues [14]:

- **Unjustified networking distribution:** Though this is a unified system yet it lacks deciding parameters related to number, location and network missions of suppliers, production facilities, distribution centers, warehouses, cross-docks and customers [6].
- **Distribution strategy:** In some specific cases supply chain management may not offer any ultimate solution to the questions related to operational control (centralized, decentralized or shared); delivery scheme, e.g., direct shipment, pool point shipping,

cross docking, DSD (direct store delivery), closed loop shipping; mode of transportation, e.g., motor carrier, including truckload, parcel; railroad; intermodal transport. Issues related to ocean freight; airfreight; replenishment strategy (e.g., pull, push or hybrid); and transportation control (e.g., owner-operated, private carrier, common carrier, or contract carrier) are also to be explored for ensuring a safer business environment [8].

- **Trade-offs impacts:** Ensuring well coordination in due process of all concerned activities to achieve the lowest total logistics cost is mandatory. Trade-offs may increase the total cost if only one of the activities is optimized e.g. full truckload (FTL) rates are more economical on a cost per pallet basis than less than truckload (LTL) shipments. If, however, a full truckload of a product is ordered to reduce transportation costs, there will be an increase in inventory holding costs which may increase total logistics costs and therefore it is imperative to take a systems approach when planning logistical activities. These trades-offs are key to developing the most efficient and effective Logistics and SCM strategy [3].
- **Information:** Process integration through the supply chain to share valuable information, including demand signals, forecasts, inventory, transportation, potential collaboration, etc. is another major concern [1].
- **Managing inventory:** Issues related to quality, quantity and locations of inventory, including raw materials, work-in-progress (WIP) and finished goods and ensuring an effective working inventory in unforeseen circumstances are yet to be managed [7].
- **Cash-flow:** Managing the payment and its mode, terms and methodologies for exchanging funds across entities within the supply chain are other functional hurdles to be encountered. Supply chain execution means managing and coordinating the movement of materials, information and funds across the supply chain. The flow is bi-directional i.e. from supplier to customer and vice versa[4].

2. AUTOMOTIVE INDUSTRY SCENARIO

In order to raise profits and customer satisfaction, many international auto players (Ford, Honda, Suzuki and Toyota etc.) are implementing lateral transshipment approach for controlling uncertainties at different echelons in their supply chain which is a topic receiving a great deal of attention in the industry today. The augment in competitive pressure in the business environment has resulted in SCM becoming a serious component of most new competitive strategy models. The automotive industry includes multiple players in extensive,

complicated, global supply chains. According to Treleven et al. (2000) [18] many auto companies are using SCM improvements as a constituent of a quick response implementation around the world. On the canvas of the Indian economy, auto industry occupies a prominent place. Due to its deep forward and backward linkages with several key segments of the economy, automotive industry has a strong multiplier effect and is capable of being the driver of economic growth. A sound transportation system plays an essential role in the country's speedy economic and industrial development. The well-developed Indian automotive industry skillfully fulfils this catalytic role by producing a broad variety of vehicles: passenger cars, light, medium and heavy commercial vehicles, multi-utility vehicles such as jeeps, scooters, motorcycles, mopeds, three wheelers, tractors etc. India's quest to become a worldwide auto-manufacturing hub has made the world's top automakers increasingly turn to India for their vehicle components. Riding this achievement and capitalizing on the strengthening demand from domestic auto companies, the Indian auto industry is intensifying the demand and is emerging as one of fastest growing manufacturing sectors, and a worldwide competitive one [12] . However, there is still a lack of noteworthy study of supply chain practices and its presentation in developing countries, in general and India, in particular [2]. Many dominant factors affect decisions made in the automotive world. Consumer preferences decide the current styles, consistency, and presentation standards of vehicles. Government trade, safety, and environmental regulations found incentives and requirements for upgrading and change in design or production. Competitive rivalries and corporate strategies provide equally important momentum for research, design innovations, and changes in the manufacturing process. Auto manufacturers in India and all tiers of the supply chain have immense opportunities to enhance their entire supply chain process with the successful implementation of SCM solution. At present there are 15 manufacturers of passenger cars & multi utility vehicles, 9 manufacturers of commercial vehicles, 16 of 2/3 wheelers and 14 of tractors besides 5 manufacturers of engines. The automotive industry is today a key sector of the Indian economy and a major foreign exchange earner for the country. Today, India is the 2nd largest tractor and 5th largest commercial vehicle manufacturer in the world. Hero Honda with 3.9 million motorcycles a year is now the largest motorcycle manufacturer in the world. With the growth of transportation system the automotive industry of India is also growing at rapid speed, occupying a vital place on the 'canvases of Indian economy.

All automakers are continually under pressure to recognize consumer preferences, national biases, and new market segments where they can sell vehicles and gain market share. Their capability to be stretchy enough to quickly react to all these pressures is determining their

prospect in the industry. The implications of these factors are enormous and propagate along the supply chain of the automakers in India. The Indian Automotive industry is growing with pace domestically as well as internationally with remarkable milestones. Below figure shows the growth of an Indian Automotive Sector.

2.1 Domestic Market growth

Commercial vehicles segment registered growth of 49.77 percent in April-July 2010 as compared to the same period last year similarly during this period the Medium & Heavy Commercial Vehicles (M&HCVs) registered growth at 74.19 percent and Light Commercial Vehicles grew at 32.87 percent. During April-July 2010, three wheelers sales recorded a growth rate of 18.08 percent, while passenger carriers grew by 20.87 percent and goods carriers grew at 7.24 percent in this period. Two wheelers registered a growth rate of 28.31 percent in April-July 2010.

2.2 Exports

In April-July 2010, overall automobile exports registered a growth rate of 54.46 percent. Passenger vehicles, two wheelers, commercial vehicles and three wheelers segments grew by 9.01 percent, 61.52 percent, 95.31 percent and 141.97 respectively in April-July 2010 over April-July 2009.

3. UNCERTAINTIES EXPLORED BY SUPPLY CHAIN

One of the major issues in a supply chain is ensuring hassle free and smooth functioning of inventory and so the role of inventory as a cushion against uncertainties and unforeseen oddities has been established for a long time [11]. Figure 1 represents the uncertainties that are explored and solved by successful implementation of supply chain.

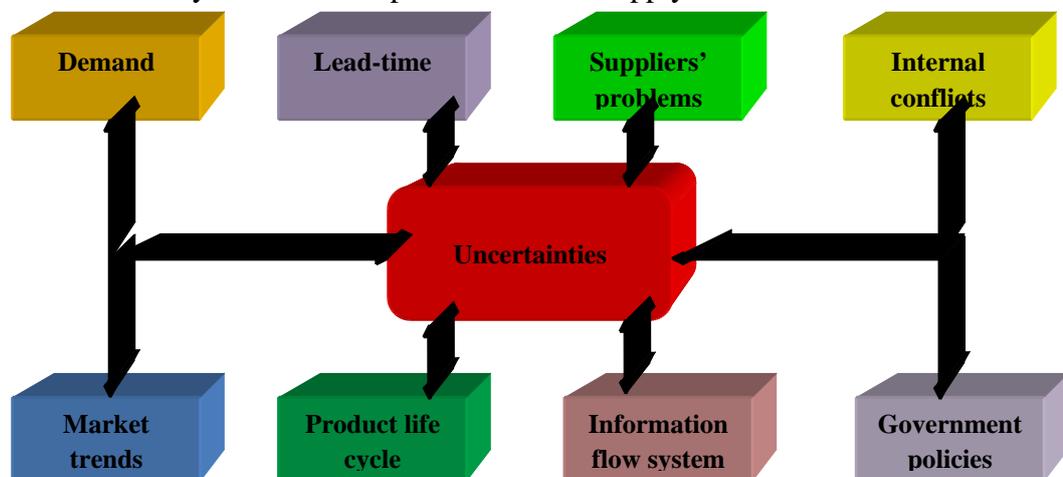


Figure 1. Uncertainties solved by supply chain.

To reduce the impact of these inventory uncertainties, supply chain managers must first understand their sources, the targeted market size, researched feasibility outcomes and the magnitude of their impact. Surprisingly many supply chains do not document and track these variables which may result into over-stock or under-stock, miscalculation of the lead-time and invest in the wrong resources for performance improvement. Besides these factors SCM covers inventory planning, replenishment planning, production scheduling, warehouse management, transportation and logistics management in auto sector [15].

4. CONCLUSION

In today's ever changing markets, maintaining a well-organized and flexible supply chain is critical for every enterprise, particularly given the prevailing volatilities in the business situation with continually shifting and increasing customer expectations. The upstream and downstream coordination engendered by supply chain management with the goal of minimizing uncertainty and variations along the supply chain shows that businesses can no longer wait for that the objective of business can be met just by becoming efficient in itself. Indian automobile and auto components industry is on a roll and there is a massive scope for improvement and augmentation of supply chain in this sector. India has become a most sought after destination for foreign companies to establish their facilities and form alliances with domestic companies. The Indian economy is now gaining momentum in the world of free trade and liberal movements of goods and services between countries. Low cost of manufacturing and conducive government support have been the major drivers for foreign companies investing in India. Therefore efficiency in supply chain will be decisive for India's automobile success.

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