Role of Supply Chain in Indian Auto Sector

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ABSTRACT

Demanding competition in today's global markets, introduction of products with short life cycles, and the discriminating expectations of customers have forced business enterprises to invest in and focus attention on their supply chains. 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. The new age customers want customized products according to their tastes like automobile color, interior, audio system, etc. This customer behavior implies that dealers and manufacturers have to maintain adequate inventory to satisfy the customer. 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

1. INTRODUCTION

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 [4]. 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 [2]. 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 [3]. 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 [6]. 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. Total turnover of the Indian automobile industry is expected to grow from USD 34 Billion in 2006 to USD 122 Billion in 2016 [7]. 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 [8]. 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.

2. INDIAN AUTOMOTIVE INDUSTRY SCENARIO

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 fulfills 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 [6]. 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 [1]. 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. 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

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.

2.3 Factors/Uncertainties explored by supply chain

One of the major issues in a supply chain is ensuring hassle free and suave functioning of inventory and so the role of inventory as a cushion against uncertainties and unforeseen oddities has been established for a long time [5]. Figure 1 represents the uncertainties that are explored and solved by successful implementation of 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 [9]. Besides these factors SCM covers inventory planning, replenishment planning, production scheduling, warehouse management, transportation and logistics management in auto sector.
3. CONCLUSION/THEME OF THE PAPER

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 critical for India’s automobile success.

REFERENCES


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Born on April 24, 1975 at Karnal, Haryana, India, the land of Karna, Dr. Dharamvir Mangal received his B.E. (Hons.), M.E. (Gold Medallist) and Ph.D. degrees from DCRUST, Murthal, P.U. Chandigarh and NIT, Kurukshetra respectively in the field of Mechanical Engineering. As a teacher he dedicatedly contributed his services at various colleges and Institutes of Haryana. He has served HPGCL (Govt. Of Haryana) in the capacity of A.E. for one year. Presently he is working as an Assistant Professor, Department of Mechanical Engineering, at The Technological Institute of Textile and Sciences, Bhawan, Haryana, India. He has attended various National and International seminars and conferences. He presented/published several papers in the Journals of International/National repute.

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