

A Conceptual study on Value creation- New trends in automotive industry.**Mr.Sahil¹&Dr.J.N.V.Raghuram²,****#1 B.Tech Student, VIT University****#2 Associate Professor, VIT University,****Abstract:**

Automobile industry is the main driver for the growth of the macro economic situation of a country. The stability and the growth of this industry will have huge impact on other adjacent industries. Consumer in this industry is experiencing different changes and becoming more dynamic, hence industry need to come up with different value creations in order to satisfy the customer. This paper discusses conceptually on various trends happening in the automobile segment and how the industry is contributing in creating a value to customer's right from the procurement to the designing.

Key Words: De-licensing, Disruptive techniques, Scarcity and authority, Spending pattern, consumerism, Supply Chain Management

Introduction:**Automotive sector in India, Post 1991**

The automotive industry in India is one of the largest in the world with an annual production of 23.37 million vehicles in FY 2014-15[8]. The growth percentage has been increased by 8.68% compared to last fiscal year. The automobile industry accounts for 7.1 per cent of the country's GDP and 22% of country are manufacturing GDP. The Two Wheelers segment, Hero Moto Corp is the leader of Indian Automobile Market with 81% of the market share, as per the growing middle class and a young population. Moreover, the rural market has significantly added a positive contribution in the growing interest of companies in the rural markets and thus aided the growth of the sector. The overall Passenger Vehicle (PV) segment has 13 per cent market share[1]. With the world's second largest population at over 1.28 billion people. "Change in mindset leading to changing investment / spending pattern from property investment to increasing consumerism, explosive growth in communication have led to urbanization of rural consumers' attitude and has increased the propensity to consumer. Therefore, increased disposable income and fast changing spending habits have led to the increased consumerism of capital good product for human comfort."

Less than 1 percent of the population currently owns automobiles. Indian Automotive Industry growth decades started in the 1970s. Between 1970 and 1984 cars were considered a luxury product; manufacturing was licensed, expansion was restricted; Indian automobile industry embarked on a new journey in 1991 with delicensing of the sector and subsequent opening up for 100 percent FDI through automatic route. Which attracted foreign auto giants to set up their production facilities in the country to take advantage of the various benefits it offers[2]. Indian Auto Industry is 2nd in Two Wheelers, 3rd in Small Cars and 5th in Commercial Vehicles among the top 10 in World [3].

India is a global hub of automobile industry having:

- 15 Manufacturers of passenger cars and multi-utility vehicles
- 9 Manufacturers of commercial vehicles
- 16 Manufacturers of 2/3 wheelers
- 14 Manufacturers tractors
- 5 Manufacturers of engines

History of automotive sector (particularly cars) in India:

Pre 1980s	1980-1993	1993-2015
<ul style="list-style-type: none"> • Closed market • Basic models • Supply was low so growth was limited 	<ul style="list-style-type: none"> • Joint venture between Suzuki and maruti motors India limited. 	<ul style="list-style-type: none"> • Global majors started their assemblies in India. • De-Licensing attracted foreign auto giants and set up their plants here, thus increasing in manufacturing sector • Implementation of VAT
Players: <ul style="list-style-type: none"> • Hindustan motors • Premier automobiles • Telco • Ashok Leyland • Mahindra 	Players: <ul style="list-style-type: none"> • MarutiUdyog • Hindustan motors • Premier automobiles • Telco • Ashok Leyland • Mahindra 	Players: <p>Maruti Suzuki</p> <p>Hyundai</p> <p>Honda</p> <p>Chevrolet</p> <p>Mahindra and many others</p>

Post 2000s, the era of globalization started and India emerged as a global manufacturing hub

Major Automobile companies in India:

Audi

- Bajaj Auto
- BMW
- Chevrolet
- DaimlerChrysler (Mercedes)
- Fiat
- Ford
- General Motors
- Hindustan Motors
- Hero Honda Motors
- Hyundai Motors
- Mahindra & Mahindra
- MarutiUdyog
- San Motors
- Skoda
- Tata Motors
- Yamaha Motors

SWOT Analysis of Indian Automobile Industry:

Strengths:

- Domestic market is large [5]
- Adoption to latest technology
- Globally cost competitive
- Government provides monetary assistance in manufacturing sector
- Labor easily available
- Low labor cost

Weakness

- Poor infrastructure [8]
- Poor connectivity
- Too many taxes imposed by the government which increases the over all price.
- Poor investments in research and development by the companies

Opportunities

- Reduction in excise duty
- Rural demand is rising
- Sourcing hub for the major international players as the manufacturing is promoted by the government[8]
- Income level is increasing day by day. People are shifting their portfolios from standard to premium.

Threats

- Non stability of the government
- Corruption
- Inflation
- Small players who are not up to the mark and quality will extinct
- Labor and union strikes at small issues
- Too much competition [5]

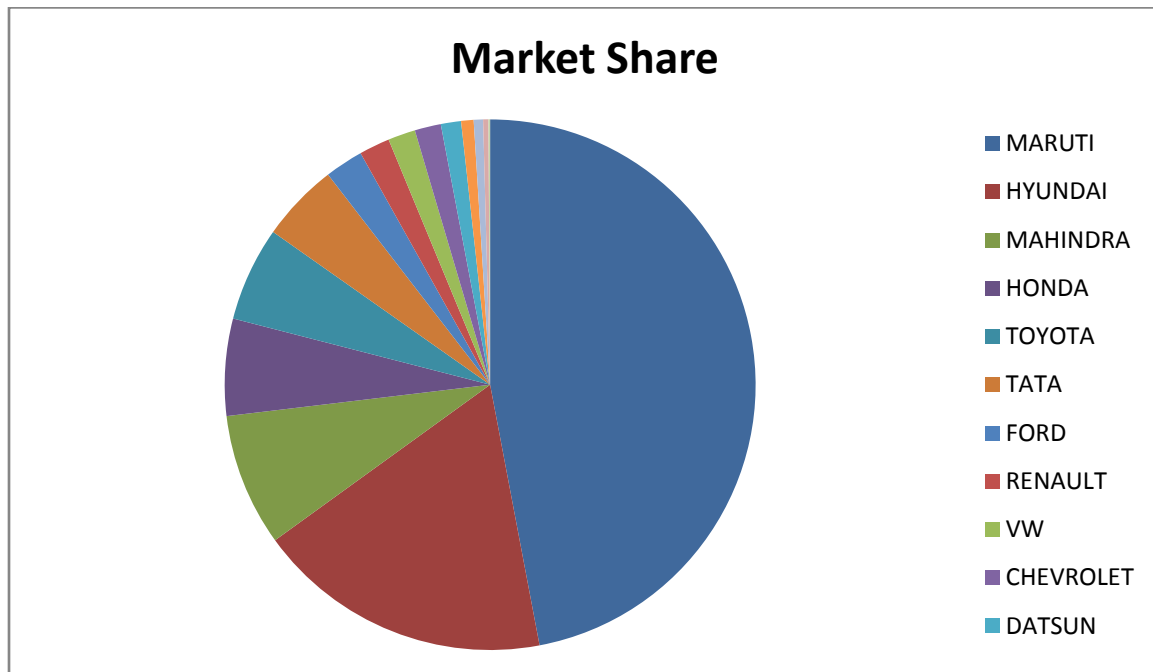
Discussion on the Strengths and weaknesses of the major players:

In India the car assemblers, particularly Maruti, have built an impressive distribution, sales and after sales network. They have also established a supplier base, which gives them more cost margins and delivery time advantages. They were also benefitted by the free float currency exchange fluctuations. Devaluation of USD gives them advantages in imports of raw material and increase in USD added more exports margins in their financial portfolio. Their biggest weakness, with the exception of TELCO, is the lack of product design capability. Multi-national assemblers could really benefit from their lean production capabilities in India, where production runs are expected to be small due to the large number of players entering the Indian market[1]. They could also set themselves apart by incorporating safety and comfort features not currently included in Indian-assembled products, these include seat restraints, airbags, and anti-lock brakes, and comfort features such as power windows, and central locks[1]. U. S. auto industries have a reputation of safety in their auto products, which they could leverage to their advantage. But these safety and comfort measures leads to the increase in the final price and the foreign giants face a plunge in their sales because of this. Though the component industry in India is small, fragmented and diverse, but is growing at an alarming rate and learning fast due to exports. It is also estimated to hold a 20-40% cost advantage over multinational component suppliers who are much large and are themselves opening up units in India to take advantage of the lower-cost, skilled workforce. It is likely that some of the multi-national assemblers or component makers might buy some of the small but niche component makers with a reputation for quality. Bosch is a very good example of this in niche marketing of auto component segment.[Look up in auto 1 page9]

Segmentation of cars in India:**On the basis of length:**

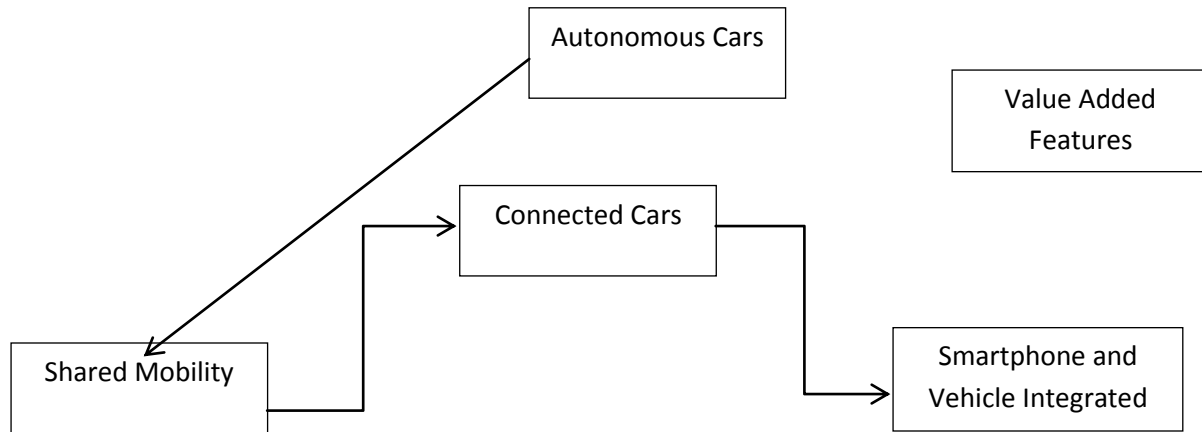
Car segment	Length of car	Category	Car model belonging to segment
A1	Upto 3400mm	Mini	MARUTI 800, NANO
A2	3401 to 4000 mm	Compact	Alto, Swift, A star
A3	4001 to 4500 mm	Midsize	City, Sx4, Fiesta, Verna
A4	4501 to 4700mm	Executive	Corolla, Civic, Octavia
A5	4701 to 5000mm	Premium	Accord, E class, Laura
A6	More than 5000mm	Luxury	5 Series, S class
B1	Vans	Vans	Omni, Versa, Magic
B2	MUV/MPV	MUV	Innova, Tavera
SUV	SUV	SUV	CRV, Vitara

Source:[6]

Current Trends:Market share of passenger cars companies in India:**Data:** April 2015**SOURCE:** [6]

Future trends:

Digital India and make in India combination: Manufacturing and Technology! Many people ask this question to the automobile engineers ie about manufacturing vs technology. Accordingly this question is somewhat similar asking a 5 year old child, who do you like more – Your mother or your father? Here mother is manufacturing and father is Technology. Now a days automobile is more of silicon and less of steel, meaning the technology has played a major role in development of automobile industry. Todayin automobile industry car is only a need, wants and desires are fulfilled by electrical and software engineering.



But still it does not mean that we should focus on technology more than manufacturing. We can grow manufacturing if we can focus on value added high technology[3]. If we do good in technology even the manufacturing sector would benefit. Now a days the smart devices are connected more to the internet than people-people the ration is 6:1. Almost all the smart devices are connected to internet and people can organize and analyze their choices from the various websites. Today in this fast moving world people do not have time even to look up at the cars features by visiting the showrooms. They look up all this on the websites of tech and sales analysts and then book their test drives on the websites as well. Only the buying process happens in showrooms. Even amazon is offering the online purchasing of cars, only the paper work happens inside our home this is the example of direct sales. Thus everything has gone digital. However, the point to note is, here manufacturing is a differentiator. There is always a need of balance between skill and knowledge same is the case with manufacturing and technology. If you look up at the companies offering the campus placements in engineering colleges the number of technology companies are huge which in turn are providing tech assistance to manufacturing companies, but in this scene the manufacturing sector is lagged behind. The manufacturing sector should try to bridge this gap.

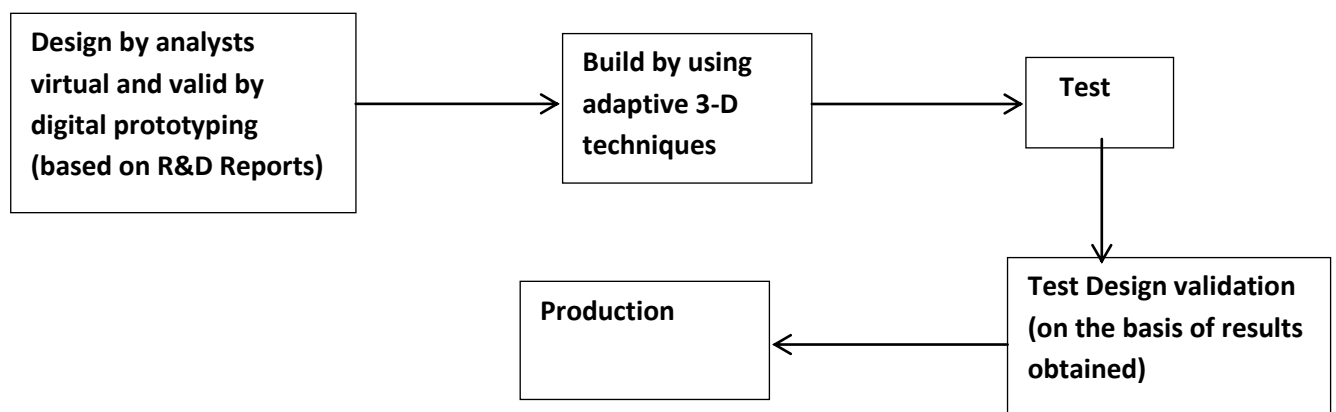
NPD Concept:

Today NPD is totally virtual. Car companies are using digital platforms to design it. With the help of virtual NPD, virtually we can look around and in completely by 360 degrees while at the concept stage we have 3d printing technique.

Product development processes: Today almost every nation and every ministry are focussing towards digitization. So the concept of this process at every level is digital in layout, digital in plant, digital in prototyping, digital measures in production, even sales go digital (Chevrolet Motors tied up with amazon for online sales and distribution).

3-D Printing Technique:

This technology has given a boom in NPD feature of manufacturing sector. Many industrialists are considering it as a third revolution in manufacturing. The first revolution was industrial revolution; the second revolution was introduction of car assembly line by ford motors. Old concept was the prototype we had to work on 3d max and other software to look up the 3d design of any model, although there was less error and it was economical to an extent but it was more laborious. Now a day's new product development (NPD) is virtual when we are at the conceptual stage. The analyzed design is directly changed in model instead of going through paper-pen and other processed model. Thus if we are lagged in technology it is possible that our competitor is already two step ahead of us. The model which we are designing on software and waiting for the virtual results to come out, our competitor is already in the league and might be measuring the physical and aerodynamic aspects of it. The one of the main feature of the 3-D printer is that the new 3-D prototype model is adaptive. The new protocol of Product Development Process is shown below

**Disruptive Technique:**

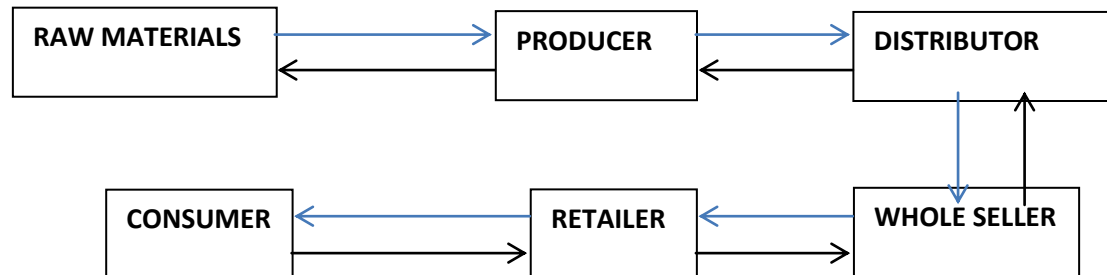
Disruptive analysis! It sounds more in scrap dealing industries. This is a sales model which is used by almost every company in manufacturing industry. In disruptive technique the manufacturers design a model in such a way that in a specific span of time it will start degrading and ultimately it will not function until we won't upgrade it. This up gradation will attract more money in companies account. One more subcategory of disruptive technique is scarcity and authority concept. Lets analyze it like if we are travelling in airplane for the first time, the aviation companies will ask for our contact number and almost every month they will send us sms for their cheap flight rates. Those sms will state that the seats are specifically meant for us at this price (authority), but if we won't book it in the next 3 days or in a

given time they will offer it to someone else (scarcity). Similarly after a specific time of purchase if we have not upgraded our automobile, firstly it will not function properly, we have to upgrade it by paying an amount after paying the amount the companies will continuously send us updates on their new products which they will state are particularly meant for us.

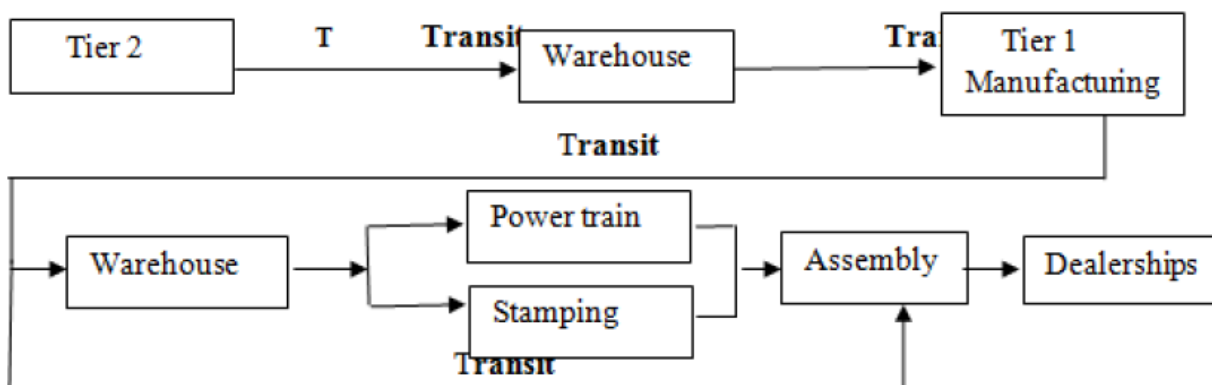
Supply Chain Management in automotive sector:

In a developing nation the automobile industry is called as the industry of industries as it supports both upstream (Mining, Steel production) as well as downstream (Finance, Insurance, After sales approach). The industry is asset, material and labour intensive which calls for involved operational planning and execution at all levels of management [4]. Government interventions have been a major driving force for development of the automobile industry in Brazil, China, South Korea and the United States at the Incubation, Penetration and Sustainability stages [4].

So what is supply chain management? It is a global network which is used to deliver Products and services to the end customers through an engineered flow of information, physical distribution and cash.



Here the Blue arrows show the primary product flow and the Black arrows shows the primary cash flow. Now if we reverse the direction of blue arrows the process will be called as the reverse product flow (consumer to service provider) and if we reverse the direction of black arrows it is called as secondary cash flow (service provider to consumer). Thus it is the sum total of efforts in integrating a network of firms and coordination as regards information, material and financial flows.



Efficient supply chain in automotive Industry.Source: [4]

Conclusion:

In this dynamic competitive automobile sector, every company has to make the best out in comparison to the competitors. Today with the increase of the value driven market most of the companies only go as per the desire of the consumers. The dynamics of the automobile sector is changing and future may only look at the luxury segment or the middle segment. It is an era where a typical truck drive looks for a truck which has all the features like a luxury car. Eventually the car companies need to face the challenges like low cost product with high efficiency and low margins. On the other hand the dumping of the low cost products from the Chinese market is another threat. With these marketing conditions, new trends need to merge in the automobile industry, thus the use of the new technology, 3D printing techniques, and excellent distribution network with efficient SCM practices are need for a player to sustain in the competition.

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