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Jakhotiya, Girish

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A Critical Evaluation of the Economics of Indian Automobile Industry

Dr. Girish Jakhotiya

1. Introduction

After the Indian economy was opened up to the global players in 1991, the Indian automobile industry rapidly transformed itself to a reasonable status of maturity. India is now known to be one of the most ‘happening automobile markets’ of the world. Indian automobiles, with their varying value chains and value propositions, are delivering an impressive performance on all the five major parameters of entrepreneurial excellence viz. business volumes, strategic cost management, technological & operational advancement, employee productivity and financial results. The Indian automobile market has become a global hub for experimentation, exposure and economic adventurism. Some of the Indian auto companies and their products are excelling on almost all the global benchmarks of ‘customer-centric value propositions’. Yet a lot more is pending to be achieved. The Indian economy has been shaping up as an open entrepreneurial arena during the last two and half decades with quite a few hiccups. The external or global variables mostly imposed a few serious uncertainties on Indian auto players, especially the dilemma of dwindling oil prices and confusion in the WTO-led regulations. Added to this was the slow pace of change in the Indian business and tax laws. (Even today the Indian Index of ‘ease of doing business’ is not impressive.)

Indian automobile companies and their foreign counterparts operating in India need considerable amount of innovation in all the five areas of versatile entrepreneurship mentioned above. The versatility of innovation in Indian as well as global automobile companies operating in India may be perceived as follows:

Parameter of versatile innovation	Automobile Segments				
	Commercial Vehicles & Allied Products	Passenger Cars & Extensions	Farming Vehicles & Equipment	Multi Utility Vehicles	Two Wheelers
Product Variants	Above Average	High	Very Good	Good	Good
Capacity Usage	Not Impressive	Good	Good	Average	Average

Technological Flexibility (i.e. Process Excellence)	Good	Average	Good	Average	Good
Quality	Good	Good	Very Good	Good	Very Good
Cost	Affordable	Affordable	Reasonable	Reasonable	Reasonable
<u>Note:</u> Parameters 1,2 & 3 pertain to the automobile companies and parameters 4 & 5 relate to the customers.					

If we go deeper through our analysis, we find that considerable improvisation is possible in the following ten areas:

- (i) Break-through or substantial innovation
- (ii) Business Model and Value Chain Expansion (Business Mix, Value Enhancement and Risk Mitigation)
- (iii) Life Cycle Analysis of a product and its applications
- (iv) Partnering with the channel partners, supply-chain members etc.
- (v) Macroeconomic, fiscal and environmental analysis'
- (vi) Technological flexibility
- (vii) Shareholder Value Appreciation, Resource or Financial Optimization
- (viii) Energy Substitutes
- (ix) Global Networking through Mergers and Acquisitions
- (x) Human Resource Enrichment

2. The Four Pillars of the Automobile Performance

Before we proceed further with our analysis of the industry, I should briefly narrate about the four pillars, which should be strengthened and placed through an equilibrium for the bright future for all the stakeholders:

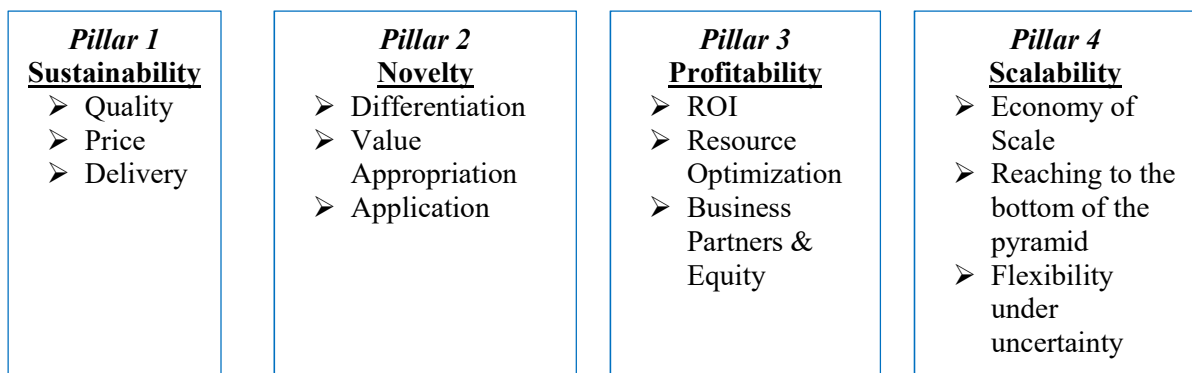


Figure 1

Unfortunately, and especially in India, the above four basic doctrines are not complimenting each other in the present automobile industry. Scalability and novelty are in an inverse proportion. Sustainability and profitability are viewed to be opposite variables. The commercial vehicle segment has been sustaining at low profitability. Passenger car segment is very vibrant with novelty but each subsegment suffers from the problem of inadequate scalability. Suboptimal scale challenges the profitability and without reasonable profitability, sustainability cannot be attained in long run. Novelty has become another definition of customer delight. Therefore, it creates cost pressures and also pressure on optimization of capacity usage. High frequency of novelty has also caused a serious scenario of too many initiatives but not executed well. So, there is a challenge of basic disequilibrium in the automobile industry. This may be presented as follows:

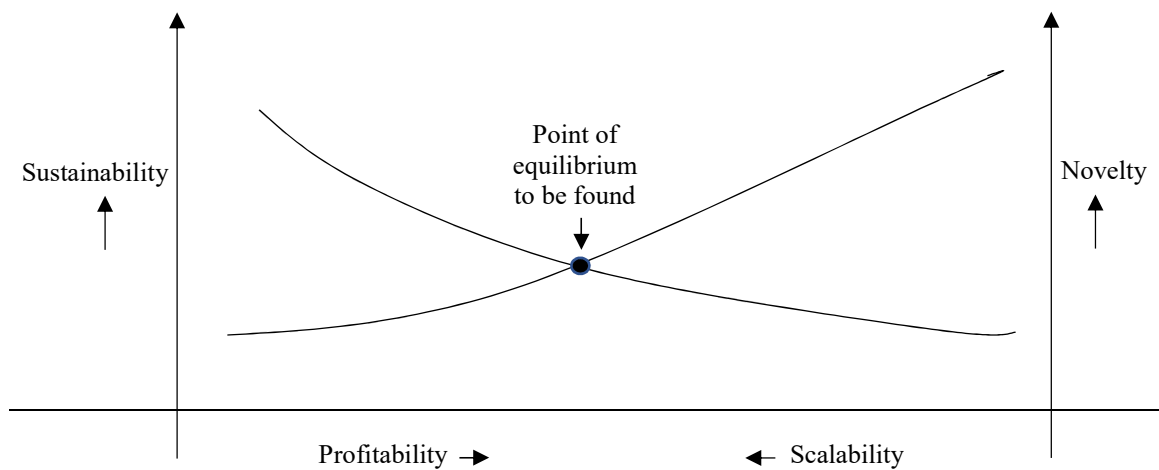


Figure 2

Almost every automobile company and segment are struggling to define this ‘point of equilibrium’ on the external background of the macro industrial cycle. There may be a broad consensus on the movement of this cycle witnessed during last two decades and expected in near future as follows:

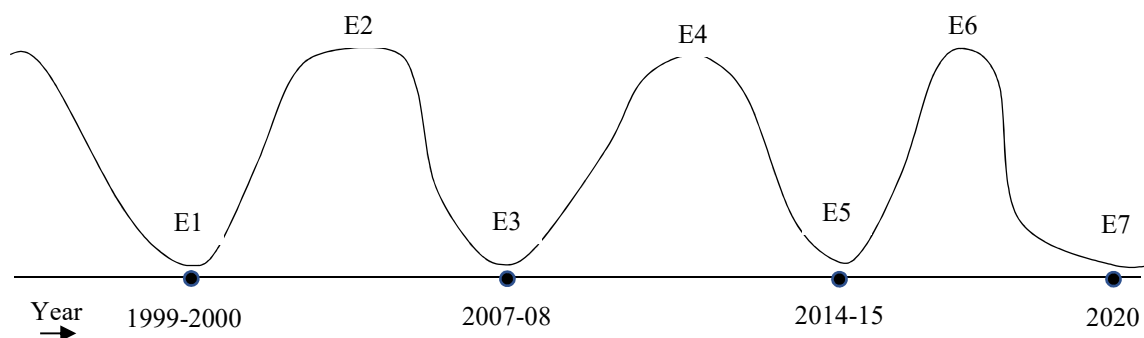


Figure 3

The automobile industry and its different segments somehow found their ‘points of equilibrium’ (i.e. E1, E2, E3 etc.) at each point of cyclical boom and recession. Interestingly, every automobile company struggled to achieve higher ROI (and valuation) during boom and sustain market share and bottom line during recession. Further interesting was the varying strategic recipe used by each organization to establish the high and low points of equilibrium. Those companies, which pragmatically defined, monitored, executed and reviewed their flexible strategic plans, could establish reasonable equilibrium under global and local uncertainties. These companies mainly followed the ‘AGNI Route’ (Aggregate Growth through Networking & Innovation) as follows:

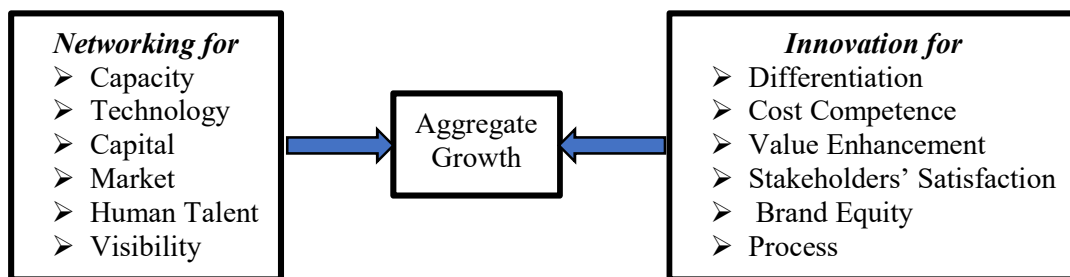


Figure 4

Three different vehicles launched by three different companies fit into the AGNI Doctrine mentioned above. These three iconic vehicles are Swift (Maruti), Scorpio (Mahindra) & ACE (Tata). I call these vehicles as iconic because they not only proved Indian automobile talent but also made a very positive and versatile change in Indian automobile market. This change was very evident through three major value-drivers viz. product, processes and people. All these three companies excelled strategically, operationally and financially through these prime products. I find an interesting common thread in the success stories of these three great vehicles, which may be explained as below:

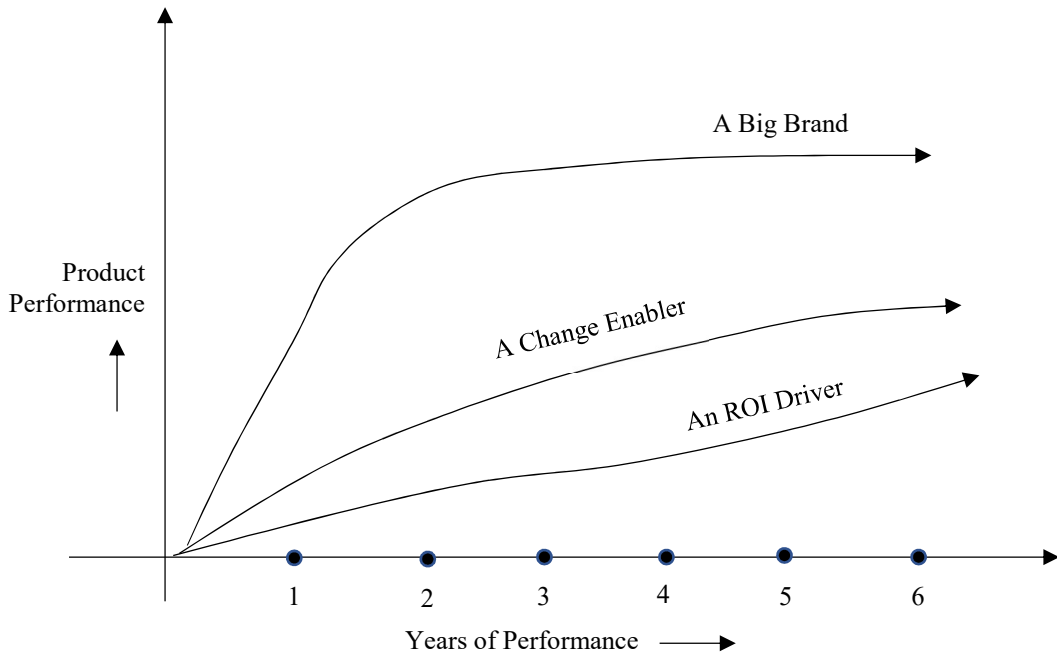


Figure 5

These three vehicles have been proving to be power engines for their respective companies. We find such illustrations from the USA, Japan, South Korea and Germany not so recently but in the era of late 20th century and early 21st century. All these four developed countries have not demonstrated any breakthrough innovation in the automobile industry during the last two decades except a few remarkable attempts in the electric vehicle segment. (This was mainly on account of their own economic stagnation, intellectual saturation and excess of operational systemization.)

3. The reforms and rejuvenation the Indian automobile industry needs

We should now elaborate the ten areas of improvisation the automobile industry should look at. There can be a lot of learning from the mistakes committed by the automobile giants from the developed countries. For example, the case of ‘Tesla’s claims of electric car innovation’ is a latest learning opportunity. Toyota and Volkswagen too can offer a few lessons about the mistakes to be avoided by the market leaders. (Similar lessons used to be learned from the well-known American auto-corporations like Ford and General Motors, in the last decade of the 20th century.)

3.1: Substantial or breakthrough innovation

As a result of impact of globalization, the competitive gap with respect to innovative thinking is shrinking very fast among the automobile players. Ideas are no more a monopoly of one organization. Yet we do not find any breakthrough innovation or a substantial attempt with respect to:

- Vehicles run on alternate energies like electric, solar and gas
- Component - related innovation to be attempted by both, the OEMs and the ancillaries
- Value appropriation i.e. bigger value for lesser price
- Automobile-based machination in the factories (lift trucks), agricultural fields and transport logistic
- Flexible technological applications in the manufacturing value chain

The collaborative efforts of innovation between an OEM and its vendors, among the various divisions of an OEM's value chain, between the OEM & its dealers are yet observed to be at a suboptimal level. With too many initiatives of product variants, volume targets and reactive approach of business, most of the Indian automobile companies do not seriously go after breakthrough or substantial innovation. The auto component makers either robotically follow the OEM's instructions or imitate the foreign designs by paying huge royalty and conduct only commercially short-lived innovation. Innovation has not been systematically rooted through the Performance Management System, hence brilliant researchers do not feel motivated or get recognized for genuine efforts. This is also a result of disproportionate salary gap between the top executives and other executives, in most of the auto companies. The innovators neither get a good financial reward nor a recognition through a joint patent or copy right between them and their organization. Partly the suboptimal innovation can also be viewed as a result of Indian education system, which teaches to imitate and perform brilliantly but does not compel to innovate. Although many Indian auto corporations benefitted from their foreign partners in terms of design and process upgradation, they need to do a long journey on their own and claim a few breakthrough innovations. Indians are excellent at cosmetic technical adoptions & adaptations, commercial and sales innovation. The core or primary innovation to deliver a globally distinct product or achieve a technological edge over the foreign competitors is yet to be witnessed in India. The last but important reason for the suboptimality of innovation is self-imposed restrictions on financial budget. Most of the family-owned automobile businesses still continue to carry a short-term vision and earn quick cash profits, rather than have an ambitious plan of nurturing a world-class organization meeting global benchmarks. Therefore, imitation is found easier than innovation.

3.2: Business Model and Value Chain Expansion

Most of the Indian auto companies widely diversified their business mix to mitigate certain inherent risks and exploit multiple business opportunities. While doing so, quite a few of them made excess of it and therefore, are facing the following critical challenges presently:

- Restriction on size in each segment
- Suboptimal capital rationing
- Inadequate entrepreneurial focus by the top team (causing suboptimality of an entrepreneurial ROI)
- Too many initiatives being difficult to implement simultaneously
- Dilution of the core competencies, leading to reduction in competitive advantage
- Unreasonable cross-subsidization within the group to hide segmental inefficiencies
- Confusion about company's core brand-image leading to dilution in customer's confidence
- Challenges in managing long-term market leadership against the big volume-players in each segment.

In addition to the above challenges faced by the OEM, the criticalities faced by the vendors and dealers are too many on account of an excessively expanded business mix and product mix. Somehow, the Indian auto-players will have to reach a 'point of equilibrium' between 'business mix diversity' and 'business focus'. If this is not done, the advantages of diversified mix would be wiped out by the impact of near future consolidation achieved by the foreign players in each segment. 'Risk mitigation' should not get diverted to 'risk replacement' causing bigger and unmanageable uncertainties. This can be better explained as follows:

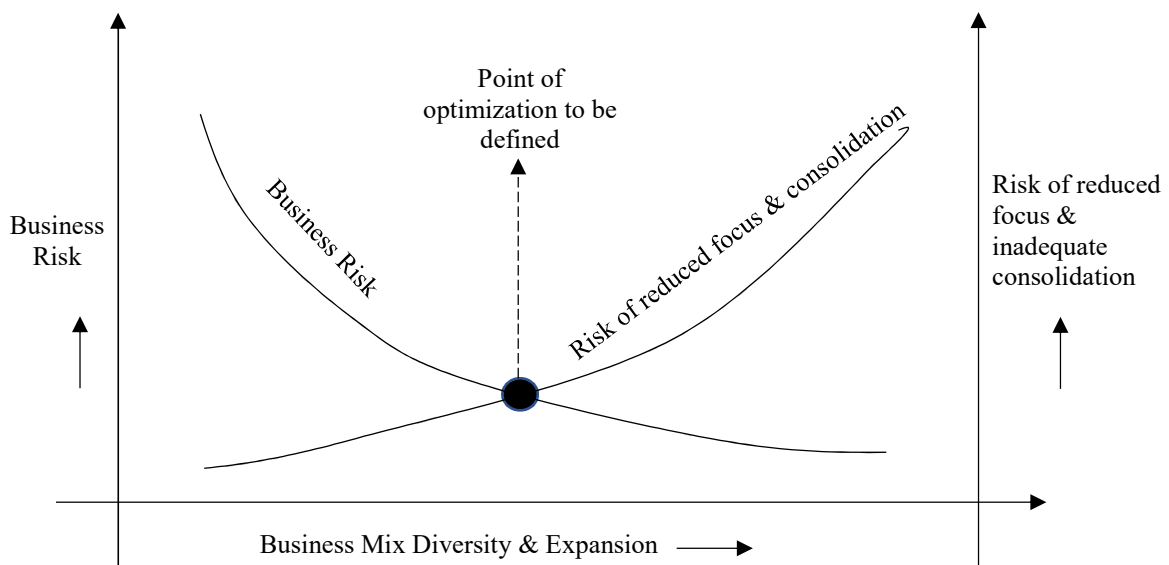


Figure 6

Excessive business mix has compelled Indian automobile companies to restrict the size of their business-wise value chains and depend too much on the partners of supply chain and distribution chain. To a large extent, this has helped these companies to become good networking enterprises. But this has also created a few challenges not so easily manageable by them. These challenges are:

- Absence of a complete or reasonably consolidated value chain causes the restriction on value enhancement as too many external business partners (with their own deficiencies) impact the overall synergic performance of the OEM.
- A generic imbalance between the life cycle planning of an OEM and its external partners causes growing confusion about the sustainability of business model, capacity expansion & capital investment, product & process innovation, entrepreneurial priorities etc.

In many cases, an OEM enjoys the opportunity of risk mitigation through business mix expansion but the same opportunity is not made available to the dealers and vendors. Hence, during recession or the cyclical dip, an OEM sustains its profitability and ROI with a ‘critical mass’, but the dealers and vendors suffer. Ironically, even after twenty-five years of globalization, the Indian auto companies have not found an amicable solution to this dilemma. As a result of this cyclical frustration, most of the Indian dealers and vendors resort to the following business and financial practices:

- No infusion of fresh capital for expansion and renovation
- Higher tendency of using highly geared capital (to avoid risk for own capital)
- Creation of new, parallel businesses causing dilution in entrepreneurial focus on the OEM related business
- Use of accounting manipulations to hide profits and create an unofficial future safety
- No long-term or strategic view of process innovation, employee capabilities, brand building etc.

The farm equipment sector of India is presently going through a very critical phase of reform as Indian farming is changing fast. Farm machination is being accepted by a growing number of farmers. Hence, demand for tractors and agro-equipment too is increasing considerably. There is a simultaneous increase in the number of tractor manufacturers and their dealers. This has made the competition acute. Dealers need to look at multiple earning streams. This obviously requires an enhancement of a dealer’s business model and value chain. A dealer can be a ‘center point of agri-activism’ for all the farmers. Farm equipment manufacturers should think of following expanded business model for their dealers:

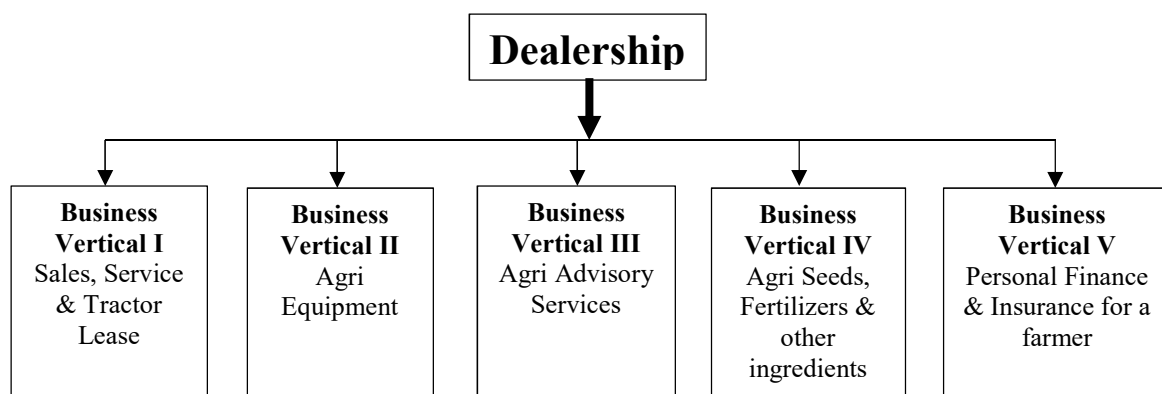


Figure 7

‘Data Analytics’ should be strategically used to study the reforms happening in the agro sector. A tractor manufacturer should consider the entire value chain carried out by a farmer. India’s agro sector is seriously fragmented into unviable smaller pieces of agricultural land. The average size of land held by a farmer is so small that he cannot afford to use a tractor. This situation can change if the tractor manufacturers take a lead in ‘land size consolidation’, with the support of rural NGOs. Farmers and their land should be brought under the umbrella of a cooperative society, which can afford to implement agro-automation. The tractor manufacturers, through their dealers, should directly transact with the farmers’ societies. This can further be extended to the financing of farmer’s entire value chain. Agriculture finance in India needs to be disciplined through its professional institutionalization. Farmers’ societies can create a win-win situation for all the stakeholders. Agro-automation can substantially increase the agriculture productivity in India.

The commercial vehicle (CV) business in India too should think about the following radical reforms:

- Leasing of commercial vehicles to the small and medium size enterprises
- Dealers to be encouraged to venture into rural and semi-urban logistics business to enhance their bottom-line and mitigate business risk
- Dealers to manage or support the entire value chain of a transporter to enhance their earning streams
- Like farmers’ cooperative societies, small transporters too can be brought together for multiple business advantages
- Manufacturers should critically evaluate their supply chain and enhance the scope of improving supply chain processes together with the vendors

With the rapid expansion and improvisation of the road-transport mechanism, high-value commercial vehicles should be speedily promoted. A study of European road transport mechanism should be very useful here. Big and medium size CV dealers need frequent capital infusion on account of high inventory and business expansion. The CV manufacturers can tie-up with Japanese banks (and funds) for cheaper loans. Almost all CV manufacturers have their own NBFCs as associated companies in their parental groups. A lot of financial engineering is possible to improve the liquidity in the CV market and reduce the working capital burden of the dealers. Similar financing should also be thought for the vendors and ancillaries. Of course, this entire exercise requires certain modifications in the business and financing models of all the stakeholders in the CV industry.

There is a unique case of business mix and business model alteration in the recent history of India's two-wheeler industry. Bajaj Auto, one of the market-leaders of this industry decided to concentrate only on the motorcycle business and close the scooter business (although it had some of the best scooter brands with it) years before. Business focus need not be misinterpreted as 'giving-up a growth opportunity', which is generically available. By closing down the scooter business, this market-leader probably denied the following to itself and to its business associates:

- A sizable market share of the market and substantial contribution to the bottom-line
- Dealers suffered from 'loss of growth opportunities', although most of them were capable of handling motorcycles and scooters simultaneously
- A substantial increase in the business valuation of the company and an appreciation in shareholders' wealth
- Synergic advantages of both the products together, especially risk mitigation through a balanced product mix
- Opportunities in the present scooter market of India are quite substantial. Vendors and dealers would have immensely benefitted.

3.3: Life Cycle Analysis of a product and its applications

As mentioned earlier, the commercial vehicles, multi-utility vehicles and tractors are the backbone of the businesses of their respective users. The transporters, logistic-arrangers and farmers also have their own business life cycles. Therefore, the manufacturers and financiers of these vehicles should analyze and appreciate a solid correlation between the two life cycles viz. the vehicle and the business built around this vehicle. Of course, the life cycle of a vehicle

should involve a gradual extension of its applications. The manufacturers and dealers of these vehicles can continuously and innovatively help their customers to enhance their value chains and achieve bigger milestones of wealth acceleration. This may be concisely explained as follows:

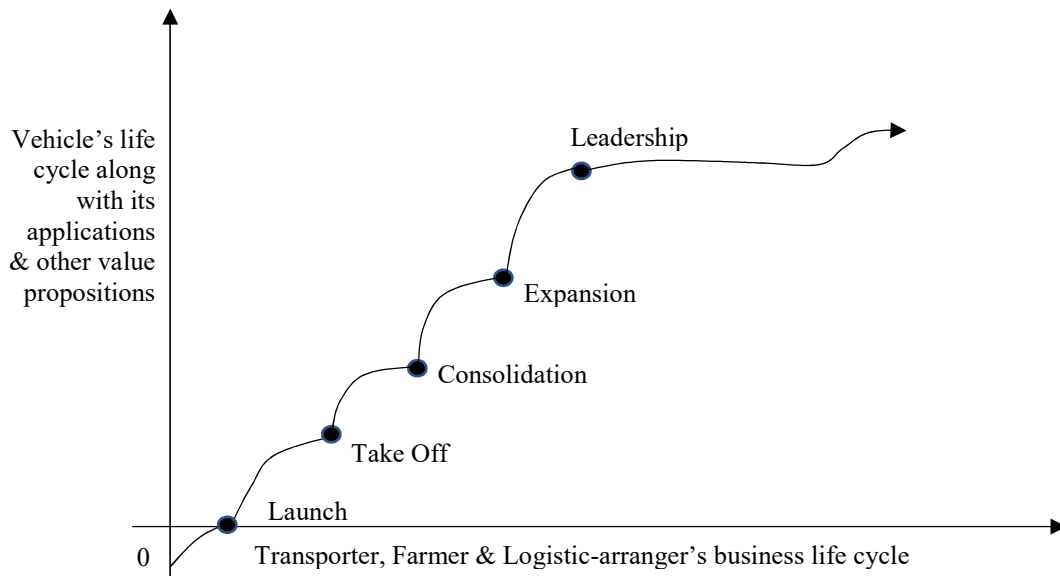


Figure 8

A similar analysis and relationship can also be established between an OEM (i.e. the principal) and its agent (i.e. the dealer). In most of the Indian cases, it has been observed that a real time, proportionate, transparent and logical correlation between a principal's strategic (i.e. long-term) plan and a dealer's long-term business plan is either absent or it is very suboptimal. A dealer must appreciate, accept and execute his OEM's marketing strategies with equal rigor. This is possible if he is facilitated to understand the life cycle movements of a prime vehicle manufactured by the OEM. Lack of such real time and adequate understanding by a dealer has caused following disadvantages for all the three stakeholders viz. manufacturer, dealer and customer:

- Inability to plan a reasonable and flexible investment in product design and relevant technology
- A transporter or farmer cannot judge, forecast and plan his incremental investment either in improvisation or replacement of his asset
- The R&D team of a manufacturer does not get an adequate clue about the long-term planning of its research projects. As a result, its efforts prove to be reactive. Absence of a long-term approach also becomes a limitation for the team to indulge in a break-through research.

- A dealer cannot decide about a long-term plan of technical competency building for his service team. This creates a serious gap between the customer’s aspirations and the service delivered by a dealer’s workshop.

3.4: Partnering with the dealers and vendors

A broad perspective assessment of the partnering with dealers and vendors by the Indian auto companies may be presented as follows:

Table 2		
Parameter defining the quantum & quality of partnering	With dealers (& other agents)	With vendors (& other suppliers)
Sharing of product knowledge		
- Present product	Very good	Good
- Future product	Very inadequate	Inadequate
Clarity in target setting & market analysis	Good	Average
Capability building support	Average	Below average
Business guidance	Good	Average
Direct & indirect financial support	Very good	Below average
Participation in all types of innovation	Poor	Average
Long-term strategy - sharing	Poor	Poor

Another unfortunate phenomenon is also applicable to the dealers and vendors of the automobile industry. Almost all auto companies have developed a volume phobia and that puts the dealers and vendors under tremendous pressure. The entire value chain of an auto company has become volume-centric and that has badly impacted the employees also. The volume-phobia has damaged this industry in the following ways:

- Long-term strategies of proactive business-building have been replaced by short-term tactics of reactive marketing for quick volumes
- Sales employees get tempted to use all ethical and unethical moves to push sales because a major portion of their variable pay (and their grading too) is connected to volume.
- Volumes are very often done at the cost of ‘after market’ initiatives. On an average, Indian customers are not very happy with the post-sales services.
- As dealers and vendors put their sight on volumes, they mostly neglect organization – building exercise. This leads to a situation of having substandard performance

management system, inferior or manipulated accounting system and an inefficient management control system.

- Vendors and especially the dealers encroach into others' territories and product segments, causing an undue competition.
- Volume pressures cause huge inventories in the dockyards of both, vendors and dealers. In almost 80% of the cases, the working capital condition is pathetic. This has caused disproportionate dependence on the costly borrowed funds. Cost of borrowing substantially erodes the operating profit.
- As volumes and market share govern the mindset of most of the strategists and business heads of the auto companies, frequent product variants are brought to the market with cosmetic changes and inadequate customer education. These variants also cause too many initiatives to be conducted by the dealers therefore they do not get enough entrepreneurial time to attend to 'business consolidation'.
- Most of the dealers are compelled to tolerate 'low margin retention' to push volumes. This makes their ROI unattractive and forces them to indulge in other lucrative businesses. Ultimately it creates a vicious circle of 'low ROI – attention to other non-auto businesses – negligence of dealership – low volumes – low ROI'. Many dealers do not get a legitimate opportunity to come out of this vicious circle. Hence, either they surrender or manipulate or continue with their dealerships somehow until the Principal does not discontinue them.
- Vendors face a more pathetic situation compared to the dealers because they are mostly at the mercy of their Principals. Capacity usage, captive dependence, frequent alterations in production schedules, unexpected changes in component designs and cost uncertainties have lowered the reasonability and sustainability of their ROI. Like the dealers, many vendors are compelled to indulge in unprofessional business practices e.g. breach of patented design contracts, direct sale of components into the open market, undue competition with the Principal's spare part distributors, accounting manipulations, supplying unethically to the Principal's competitors etc.
- Vendors do not devote enough time and budget for serious innovation. Component development is mostly driven by the OEMs. Even some of the big vendors (except a few proprietary designs) do not bother to study the market dynamics to decide their component development projects.

Volume-phobia has seriously impacted the quality of human resources of the dealers and vendors. Most of their employees lack entrepreneurial skills. Of course, same can be said

about the sales employees of the OEMs. Principals do not seriously involve in the human resource development initiatives of their agents. Financial management strategies and practices of majority of the dealers and vendors are suboptimal on most of the parameters. This can be summarily narrated as follows:

Table 3				
Financial Management Parameters & Performance	Dealers & Vendors			
	Commercial Vehicle Segment	Passenger Car & MUV Segment	Tractor Segment	Two-Wheeler Segment
Infusion of own funds & control on debt / Equity Mix	Poorly managed	Average	Average	Average
Management of liquidity	Below average	Average	Below average	Good
Operating ROI	Average	Good	Average	Good
Financial (accounting) governance	Average	Average	Below average	Average
Working capital management	Poor	Average	Average	Good
Owner's ROI	Average	Average	Average	Average
Sustainability of ROI	Not very satisfactory	Satisfactory	Satisfactory	Satisfactory

3.5: Macroeconomic, fiscal and environmental analysis

Quite a few of the chief economists or economic advisors of the auto companies are very good bankers or financial market analysts but not good business economists. Most of the Indian business economists prove to be theoretical or very narrow-minded when it comes to linking the macroeconomics of a nation with the microeconomics of an auto company. The multiplicity and relativity of the macro risks and micro risks is to be well understood and pragmatically connected to the auto industry. A brief description may be presented as follows:

Table 4	
Macro Risks	Impact on the auto industry (with special reference to India)
Economic	<ul style="list-style-type: none"> ➤ Cost of borrowing for leveraged buyouts, funding of the working capital of dealers & vendors ➤ Impact of inflation on project capex, cost forecasting and contractual obligations

	<ul style="list-style-type: none"> ➤ Movement of capital performance of banks and NBFCs ➤ Crude oil price movements
Fiscal	<ul style="list-style-type: none"> ➤ Exact & visible impact of GST on spare part business, vendors & distributors, costing & pricing of a vehicle, design of a vehicle to be tax efficient ➤ Fuel price mechanism, choice between petrol & diesel ➤ Backward areas & tax soaps, R&D related advantages, patents & copy rights related fiscal policies ➤ Subsidies & subventions to the farmers and small transporters
Socio-political	<ul style="list-style-type: none"> ➤ Impact of growing nationalism on international collaborations, import substitutes, acquisitions ➤ Labour & wage policies management and impact of political scenarios ➤ Agricultural conditions, farmers' social activism & its impact on farm management ➤ Automation vs. employment generation ➤ Vehicular ratio between population & number of vehicles
Natural Environment	<ul style="list-style-type: none"> ➤ Pollution norms & their impact on vehicular designs, costing and pricing ➤ Management of air pollution & relevant initiatives ➤ Monsoon, soil condition & cultivation
Micro Risks	Impact on the auto industry (with special reference to India)
Technological, Operational & Process	<ul style="list-style-type: none"> ➤ Cost of technological upgradation ➤ Impact of loss of technological competitiveness ➤ Strategic cost management for long-term technological collaborations ➤ Flexible technology, capacity usage & capex funding
Structural & Systemic	<ul style="list-style-type: none"> ➤ Impact on budgetary empowerment of segments ➤ Systemic financial & operational control ➤ Early warning economic signals & respective responses
Financial	<ul style="list-style-type: none"> ➤ Impact of high & low leverage of the capital structure ➤ Free cash flow analysis & evaluation of liquidity risk ➤ Channel financing risks associated with the channel partners ➤ Analysis of the impact of business risks on the financial valuation
Behavioural / Cultural	<ul style="list-style-type: none"> ➤ Impact of quality of corporate governance on business performance ➤ Family governance risk & its impact on business performance ➤ Local cultural risks & their impact on employee productivity ➤ Behavioural / cultural risk in the acquisitions & mergers

The automobile industry economists need to carry out a socio-economic environment scanning carefully to ascertain the correlation between the business growth of an auto company and the growth of an economy. In many cases, this study has been found to be imperfect for want of an authentic and complete data base. In addition, too many socio-economic variables and uncertainties make any quantum-data analysis difficult in India. Yet a few areas of research are to be managed well, as given below:

- Shift in transportation devises & styles e.g. shift to rented cars, shared cars, public transportation, impact of collaborated offices etc.
- Government’s automobile norms for vehicles, pollution control, vehicular traffic & population
- Impact of new and old roads on the use of commercial vehicles, passenger cars etc.
- Agricultural output, machination, rural farm labour etc. and their impact on the use of tractors
- Impact of growing use of rail and marine transport on the vehicular sales
- Change in demography and its impact on the sale of two-wheelers, vehicular design etc.
- Capital flows in the economy and interest rate movement

The economists should closely observe and analyze the automobile industry of at least four countries viz. the USA, Germany, South Korea and Japan. This study may be for different objectives as follows:

Table 5	
Country	Objectives of study of its automobile industry
USA	<ul style="list-style-type: none"> ➤ Impact of shifting the production bases outside the country on R&D initiatives & local employment ➤ Stagnated growth of the automobile industry on account of lack of incremental investment in new infrastructure & intangible assets ➤ Lower employee productivity as a result of stagnated wages ➤ Impact of tax & tariffs on new investments, dividend payouts & overall shareholder value appreciation
Germany	<ul style="list-style-type: none"> ➤ Steady investment in new product development, new technology ➤ Disciplined network of SME vendors & an integrated value chain ➤ Emphasis on value exports, guaranteeing a reasonable ROI for the OEMs ➤ Industry-friendly policies of the government ➤ Good banking network

	<ul style="list-style-type: none"> ➤ Impact of bigger volumes cornered by a few big companies on the SMEs & other small competitors ➤ Recent outsourcing of component development & other R&D initiatives from the Asian countries
Japan	<ul style="list-style-type: none"> ➤ An overall impact of negative economic growth on the automobile industry ➤ Negative interest rates on bank deposits & their impact on capital formation in the country ➤ Monopoly of three major players in the automobile industry & its impact on overall competitiveness ➤ Stagnated employee productivity & its impact on business volumes ➤ Restriction on R&D budgets, no break-through innovation in recent past ➤ Impact of migrated labour on the automobile industry ➤ Outsourcing of component manufacturing ➤ Performance of Japanese auto MNCs outside Japan & the overall effectiveness of their global joint ventures
South Korea	<ul style="list-style-type: none"> ➤ Impact of recent economic slow-down on the automobile industry ➤ Monopolistic policies & performance of two giant Korean auto-makers ➤ Recent decline in the overall performance of Korean auto MNCs ➤ Government's conservative response to the auto industry's growing demand of reforms ➤ Reduced investment in R&D initiatives of the auto components

3.6: Technological Flexibility

The Indian farm equipment manufacturers are seriously working on customized tractor for a single customer. It is yet to be proved, to what extent a customized tractor would be commercially and technically feasible. Most of the Indian automakers are swiftly moving to technological flexibility by either upgrading their existing plants or establishing new state-of-the-art plants. The tractor manufacturers have taken a lead in this regard. Of course, for want of a break-through innovation, even the auto-makers from the developed world have not achieved substantial technological flexibility. A new-age company like Tesla is viewed to be a leader to establish latest benchmarks of such flexibility. Tesla too has realized that its efforts would be restricted for want of a rigorous research. Indian automobiles will have to search complete and genuine answers to the following questions while working on technological flexibility:

- To what extent the robotic applications would add to such flexibility?

- What can be the exact use of artificial intelligence in enhancing the usefulness of technological flexibility and its sustenance?
- How to balance between process flexibility and product design flexibility?
- How to forecast the next milestone of reforming technological flexibility?
- What can be the cheaper ways of financing the incremental investment in such flexibility?
- Under the WTO regime, how do we handle the patented rights of technological flexibility?
- How do we constantly upgrade the technological capabilities of our employees, vendors and dealers?
- To what extent, this flexibility would impact the multiplicity of auto-components and their multiple applications?

The techno-commercial model of introducing and sustaining technological flexibility will have to be based on a strategic combination of the following variables:

- Volume vs. differentiation
- Product design flexibility vs. process flexibility
- Choice between capex and opex
- Flexibility restricted to an OEM or extended to the vendors
- Customer's delight through product differentiation or cost advantage
- Investing in tangible assets vs. intangible assets
- Dependence on own vs. leased technological flexibility

Strategizing the approach to technological flexibility would constantly require a three-dimensional analysis of an auto-maker's value chain:

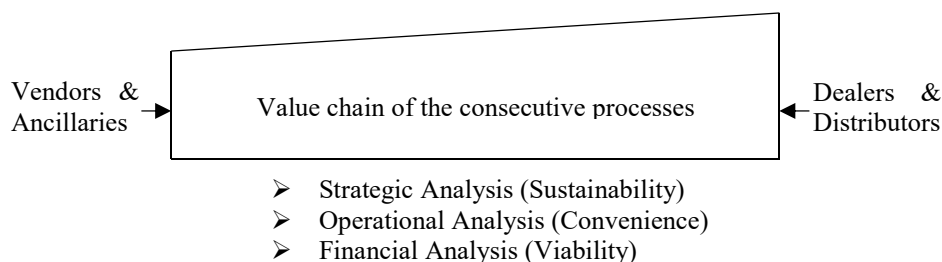


Figure 9

Technological flexibility will have to be also viewed from the point of view of the customer. Therefore, such flexibility would highly depend on 'value proposition' in an Indian context. This is simply because the incremental investment in technological flexibility will have to be

ultimately paid by the customers. The value i.e. utility expectations may be briefly illustrated as follows:

Table 6				
Type of vehicle	Value Expectation			
	Real Value	Esteem Value	Perceived Value	Practical Value
Tractor	High	Zero	Average	Very High
Heavy Commercial Vehicles	Very High	Zero	High	High
Passenger Car (High End)	Average	Very High	High	Average
MUV – High End	Average	High	High	Above Average
Motorbike	High	Zero	Average	Very High
LCV	High	Average	High	Very High

The strategic assessment of technological flexibility can also be based on the following factors of competitive positioning, business and earning model dynamics:

Table 7			
Company's Life Cycle position (for a specific product segment)	Strategic factors defining Technological Flexibility		
	Market leadership through differentiation	Cost & price performance	Capability of the network partners & their business & earning models
Launch	Not Applicable	Applicable	Applicable
Take Off	Not Applicable	Applicable	Applicable
Consolidation	Not Applicable	Not Applicable	Applicable
Expansion	Applicable	Not Applicable	Applicable
Absolute Leadership	Applicable	Applicable	Not Applicable

3.7: Shareholder Value Appreciation and Resource or Financial Optimization

The last decade of the 20th century (when India started opening-up her markets to the world) started witnessing either a stagnation or decline in shareholder value offered by most of the automobile MNCs worldwide. This was mainly for three reasons viz. (i) these companies reduced their efforts of product differentiation (ii) they used either costly equity or were overcapitalized and (iii) they were also impacted by the slowdown in their parent economies. There was also a fourth reason for sharp decline in the rate of growth in shareholder value. It was the reversal of the impact of their global networking business model. American, Korean

and Japanese MNCs saw stagnation of their growth-rates mainly on account of their declined competitiveness in terms of cost and capacity usage. These companies also slowed down on their innovative efforts as their organizational structures suffered from systemic bureaucracy. In the beginning of the 21st century, the Indian automakers realized enormous opportunities in both the markets, local and global. Hence, they started capitalizing on their local strengths, acquired new technologies and capacities, consolidated their market positions. The obvious result was an impressive rate of growth in shareholder value. A few companies also lost bit of this value, mainly on account of their own blunders and weaknesses and not so much for the external factors. A broad comparative statement of the various factors which impacted shareholder value in India during the last two decades may be presented as follows:

Factor impacting the shareholder value during last two decades	Various companies in various automobile segments (an average evaluation)			
	Commercial Vehicle	Passenger Car & MUV	Tractor & Agro-equipment	Two-Wheeler
Highly geared business acquisitions	Average (+)	High (-)	Nil	Average (+)
High cost of new projects installed	High (-)	Average (-)	Low (-)	Low (-)
Technological upgradation	Average (+)	High (+)	Average (+)	Low (+)
Value appropriation	Low (+)	High (+)	Low (+)	Low (+)
Strategic cost management	High (+)	Average (+)	Low (+)	Low (+)
Higher valuation of acquisitions	Average (-)	Average (-)	Average (-)	Low (-)
Reasonable & timely executed acquisitions	Average (+)	High (+)	Low (+)	Low (+)
Employee productivity	Low (+)	Average (+)	Average (+)	Low (+)
Resource optimization including effective use of idle assets	High (+)	Low (+)	High (+)	Average (+)
Withdrawing from unrelated or loss-making businesses	Average (+)	High (+)	Low (+)	Low (+)
Capacity consolidation	High (+)	High (+)	High (+)	High (+)
Product range consolidation	Average (+)	High (+)	Average (+)	High (+)

Creation of big brands	Average (+)	High (+)	Average (+)	Low (+)
Networking through joint ventures, strategic vendor management & other channel partners	Average (+)	High (+)	Average (+)	Average (+)
Balanced use of the Debt/Equity Mix	Low (+)	Average (+)	Average (+)	High (+)
Emphasis on product & segment specialization	Average (+)	High (+)	Average (+)	Low (+)
Balanced use of product mix	High (+)	High (+)	Average (+)	Low (+)
Timely & appropriate use of fiscal policies	Low (+)	Low (+)	High (+)	Low (+)
Sourcing funds globally	Average (+)	Average (+)	Low (+)	Average (+)
Export performance	Average (+)	High (+)	High (+)	High (+)
Note: The impact ranges from very high to very low and in certain cases zero also. It is defined both, positive & negative.				

It is interesting to note that those Indian auto companies which used cheap borrowed funds efficiently and achieved good Debt-Service Coverage Ratio continuously, added to shareholder value impressively. Whereas, the companies with huge reserves, low borrowing and not so impressive operating performance, could not add considerably to the shareholder value. Companies with average or low capacity base but impressive networking with their business associates (e.g. vendors and ancillaries) could also achieve substantial increase in their small shareholder value base. If we attach a reasonable cost of capital to the reserves of some of the old auto-companies, their Economic Value Added (EVA) would look negative. This is simply because these old giants didn't use their capital optimally for exploiting the growth opportunities. A brief explanation of the connect between EVA and shareholder value may be presented as follows:

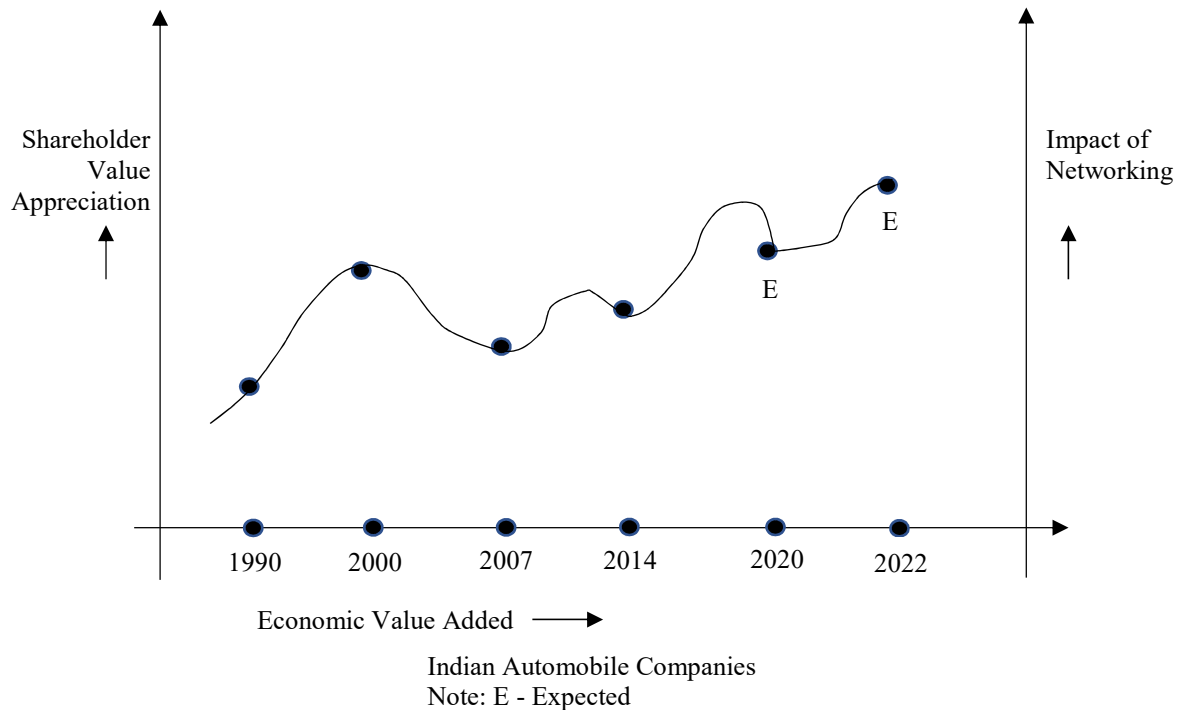
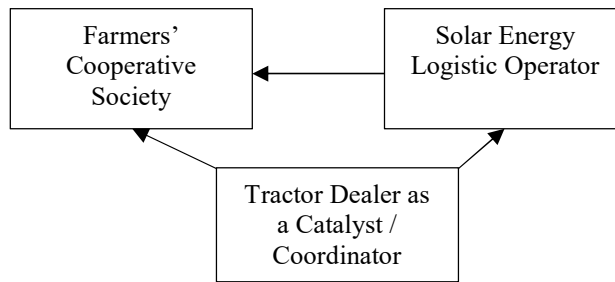


Figure 10

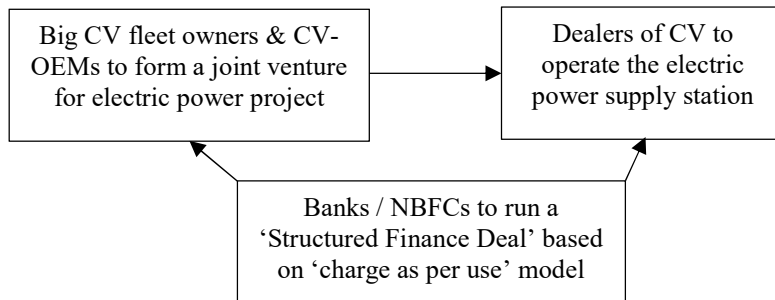
3.8: Energy Substitutes and Research & Development

It is heartening to know that almost all the Indian automakers are seriously working on electric vehicles (including electric motorbikes). Some companies are close to achieving the milestone of a commercially viable launch of e-vehicles. The Indian companies are struggling on four parallel fronts to succeed in this most essential venture viz. government's fiscal support, infrastructure of electric power supply stations, affordable pricing and customer's value expectations. Unfortunately, Indian government and Indian automakers do not have a time-bound and disciplined approach to launching the e-vehicles soon. China is way ahead here and has ambitiously declared that the year 2030 should see Chinese roads full of e-vehicles. Interestingly, in the high-segment, Tesla too has yet to reach sizable volumes for different markets to make its e-vehicle projects commercially viable. The German auto-conglomerates, which are known for sustainable and incremental innovation, should be expected to come out with economically viable business models of the e-vehicles very soon. Another big and potentially viable area of research should be solar energy applications. Vehicles with sizable roof-tops should be viable solar energy applicants. Countries like India, Australia, Saudi Arabia etc. have a very supportive natural environment. Indian farmers should benefit a lot if they get solar energy-based tractors and other agricultural machines. For the electric and solar energy applications in the automobile industry, we can think about a few innovative organizational structures and business models as follows:

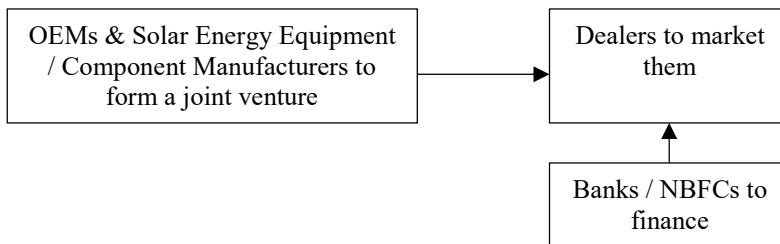
Business Model 1



Business Model 2



Business Model 3



Business Model 4

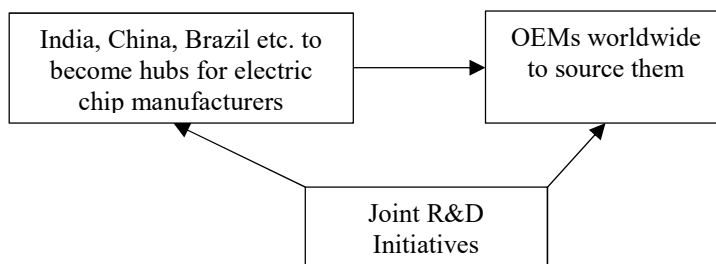


Figure 11

In countries like India, many start-ups have been attempting to conduct substantial innovation on electric energy devices for the two-wheelers. These innovations do not reach their logical conclusion for various reasons like (i) lack of capex support, (ii) absence of facilitation for clinical trials, (iii) lack of scaling-up facilitations, (iv) ignorance of patenting and other legal formalities and (v) lack of overall moral and operational support from the OEMs. These small attempts of innovation, which are popularly called '*jugad*' should be supported through the

innovation centers of the OEMs. Many OEMs do not actively support their own employees who take utmost interest in such innovative attempts. OEMs should work on following initiatives to promote the innovative attempts of electric energy devices, vehicular designs, solar power applications etc.:

- Promote innovation through the Key Result Areas (KRAs) of the PMS
- Reward innovators substantially
- Have a mechanism of joint patent or copy right, owned by the OEM and the employee jointly
- Establish linkages with research institutions
- Collaborate with global partners in research
- Create and use a special innovation fund

3.9: Global networking through mergers and acquisitions

More than 55% of the global and Indian automobile mergers and acquisitions have not sustained beyond six to seven years. Mergers and acquisitions have been basically initiated in the Indian automobile industry for the following six main reasons:

- Technology upgradation (i.e. use of global patents through different business models)
- Capacity consolidation (mostly through acquisitions under various operational management models)
- Capital infusion (especially for global network expansion and local capacity consolidation)
- Different types of business synergies (mainly through amalgamations with the MNCs in and outside India)
- Cost competitiveness (through cheaper acquisitions of production lines, distribution networks etc.)
- Product designs and use of big brands (especially in the USA and European countries)

Indian auto-majors certainly benefitted from most of the mergers and acquisitions initiatives and consolidated their local and global positions in terms of technology, capacity and brand recognition. As stated earlier, many of these initiatives didn't sustain for following three major reasons:

- Wrong Objectives
 - No clear definition of objective
 - No clear execution plans

- Very late realization of mutual differences
- Shortsighted vision
- Wrong Valuation
 - Wrong or inadequate due diligence
 - Suboptimal valuation of intangible assets and human resources
 - Very high capex payout
 - Very low returns
- Wrong Timing
 - Mismatch with the milestone in partners' life cycles
 - High cost acquisitions in a boom market
 - Acquisitions without adequate home consolidation

Around 25% of these initiatives suffered from all the three reasons mentioned above therefore the acquirers lost heavily on the front of capex invested, market capitalization, market share, damage to brand image and turbulence in present business. A broad account of the advantages and disadvantages of the global networking through mergers and acquisitions may be briefly narrated as follows:

Table 9				
Area of Advantage & Disadvantage	Commercial Vehicle Business	Passenger Car & MUV Business	Tractor & Agro-equipment Business	Two-Wheeler Business
<u>Business Consolidation</u>				
• Capacity	Good (a)	Good (a)	Average (a)	Average (a)
• New Markets	Average (a)	Very Good (a)	Good (a)	Good (a)
• Brand Equity	Inadequate (a)	Good (a)	Good (a)	Inadequate (a)
• New Products	Average (a)	Very Good (a)	Average (a)	Average (a)
<u>Cost Management</u>				
• Low capex acquisitions	No (da)	Average (a)	Good (a)	Average (a)
• Cheaper component sourcing	Average (a)	Average (a)	Average (a)	Good (a)
• Low royalty	Neutral	No (da)	Neutral	Inadequate (a)
• Cheaper processing cost	No (da)	Average (a)	Good (a)	Inadequate (a)
• Cheaper distribution cost	No (da)	Good (a)	Good (a)	Good (a)

<u>Employee Development & Satisfaction</u> <ul style="list-style-type: none"> • High-skilled engineers • Cheap cost of labour • Building-up global leadership • Improvement in plant productivity • Strengthening of sales team • Better innovators • Labour law compliances 	<p>Average (a)</p> <p>No (da)</p> <p>Average (a)</p> <p>Good (a)</p> <p>Inadequate (a)</p> <p>Average (a)</p> <p>No (da)</p>	<p>Average (a)</p> <p>No (da)</p> <p>Good (a)</p> <p>Average (a)</p> <p>Inadequate (a)</p> <p>Inadequate (a)</p> <p>Inadequate (a)</p>	<p>Average (a)</p> <p>Good (a)</p> <p>Good (a)</p> <p>Average (a)</p> <p>Inadequate (a)</p> <p>Inadequate (a)</p> <p>Neutral</p>	<p>Good (a)</p> <p>Neutral (a)</p> <p>Average (a)</p> <p>Average (a)</p> <p>Neutral</p> <p>Good (a)</p> <p>Good (a)</p>
<u>Technology, Operations & Logistics</u> <ul style="list-style-type: none"> • Technological upgradation • Operational synergy • Low cost of patent-based royalty • Technological research collaboration 	<p>Average (a)</p> <p>Good (a)</p> <p>No (da)</p> <p>Inadequate (a)</p>	<p>Good (a)</p> <p>Good (a)</p> <p>No (da)</p> <p>Inadequate (a)</p>	<p>Inadequate (a)</p> <p>Good (a)</p> <p>Neutral</p> <p>Inadequate (a)</p>	<p>Inadequate (a)</p> <p>Inadequate (a)</p> <p>Average (a)</p> <p>Neutral</p>
<u>Fund i.e. Resource Management</u> <ul style="list-style-type: none"> • Cheaper fund (equity & borrowings) • Unlocking the idle assets • Management of direct & indirect taxes • Improved liquidity • Improved valuation 	<p>Average (a)</p> <p>Very Good (a)</p> <p>No (da)</p> <p>Inadequate (a)</p> <p>No (da)</p>	<p>Good (a)</p> <p>Good (a)</p> <p>No (da)</p> <p>Average (a)</p> <p>Average (a)</p>	<p>Good (a)</p> <p>Very Good (a)</p> <p>Neutral</p> <p>Average (a)</p> <p>Inadequate (a)</p>	<p>Good (a)</p> <p>Good (a)</p> <p>Inadequate (a)</p> <p>Average (a)</p> <p>Inadequate (a)</p>
<p>Note: (a) – advantage & (da) – disadvantage</p>				

Overall conclusion that can be drawn from the above analysis is, passenger car and MUV business benefitted maximum from the mergers and acquisitions. The commercial vehicle business didn't benefit so much for the reasons mentioned above.

3.10: Human Resource Enrichment

Indian automobile industry, on an average, has got good quantum of productive engineers in the junior category of management. Some of the business vertical and functional heads have demonstrated global leadership skills during the last decade. Yet a lot of improvisation is possible in the middle management, shop-floor workforce and the human resources deployed by most of the dealers, distributors and vendors. We can concisely evaluate the overall quality of human resources in the Indian automobile industry as follows:

Evaluation Parameter (Capability)	Categories of Employees			
	Entrepreneurial (Top-level Executives)	Decision Making (Middle-level Executives)	Knowledge- oriented (Junior level Executives)	Robotic or Systemic (workers & Supervisors)
<u>Strategic Capability</u>				
• Strategic leadership	Good	NA	NA	NA
• Vision	Good	NA	NA	NA
• Networking	Very Good	Good	NA	NA
• Drive & daring	Good	Good	NA	NA
• Strategic planning & execution	Good	Average	NA	NA
• Managing under uncertainty	Good	Average	NA	NA
• Innovative thinking	Average	Below Average	NA	NA
<u>Financial i.e. Commercial Capability</u>				
• Resource mobilization	Very Good	Average	NA	NA
• Financial appreciation of business	Good	Good	NA	NA
• Cost awareness	Average	Average	Inadequate	Almost Nil
• Financial monitoring skills	Good	Average	NA	NA
• Negotiating skills	Very Good	Good	NA	NA
• Application of financial resources	Good	Good	Average	NA
<u>Operational Capability</u>				
• Operational control	Good	Very Good	Good	NA

• Process performance	NA	Very Good	Very Good	Good
• Waste control	NA	NA	Good	Very Good
• Safety of assets	NA	NA	Good	Average
• Shop floor productivity	NA	NA	NA	Good
• Coordinative efforts	NA	Very Good	Good	Average

We should also assess the overall human resource management using the parameters (or components) of the PMS executed by most of the Indian auto companies as follows:

Table 11	
Parameter or Component of PMS	Average Assessment of HRM in Indian Auto Companies
Goal & role clarity and relevant job descriptions	It is good at the top level, very good at junior level but not so good at the middle level of organizational hierarchy
Target definitions & executions	‘Volume’ as a target is over-emphasized. Long-term targets do not carry good weightage. Inter-functional coordinative targets are not well defined. Critical or important targets are not correctly linked with financial results.
Periodic review & counselling	Review is reasonably conducted but counselling is not done adequately
Performance monitoring	Early warning signals & alternate solutions are not rigorously defined. Routine monitoring is good as it is connected with the volume
Performance appraisal	Appraisal is not done in-depth at almost all the levels. A robust appraisal approach & system is theoretically available but not implemented well.
Performance-based reward	Variable pay or performance-based rewards are to be further innovated & corrected. These rewards are good at higher level but not so motivating at middle & junior levels of employment
Selection & recruitment exercise	It is done well at top & middle levels but not so at junior level. Heavy dependence on routine parameters has made the exercise robotic. It has led to serious exodus of manpower at junior level.
Promotions, career planning & succession planning	These are not appropriately implemented at the entry level. Senior-level execution is good. Succession planning is not viewed as a strategic exercise.

Most of the plants of Indian automakers and foreign automakers located in India need following improvisations in their approach to ‘employee relations and PMS’:

- Workers’ KRAs should be more business oriented

- Union leaders, council members and informal leaders should be adequately exposed to business realities and are to be transformed into business partners
- A lot of innovation is possible in the initiatives of employee engagement
- Long Term Settlements (LTS) of plant wages should be more strategically designed, considering long-term impact. ER or IR managers need strategic and commercial capabilities
- Performance-linked rewards should be pragmatically and yet scientifically designed, keeping in mind ‘versatile productivity’ of the workers, sustainability of such reward system and principle of equity

The dealers, distributors and most of the vendors of the automobile companies in India do not view human resource management so seriously and strategically, although some good awareness is growing among them. A few important initiatives and reforms must be implemented by them as follows:

- Strategic manpower planning
- Building-up an effective HR function based on a comprehensive PMS
- Execution of appropriate wage system for talent retention
- Empowering the managers through suitable KRAs and work freedom
- Systematic succession planning
- Differentiating between ownership and management

As most of the dealers do not treat their service workshops as profit centers, they do not take workshop human resources seriously. The workshop employees need following ‘profit-making’ capabilities:

- Understanding customer delight fully
- Quality and delivery of service with complete commitment
- Performance-based use of each asset
- Commercial acumen linked with service orientation
- Sales and promotional skills
- Awareness of innovative and new services
- Non-service revenue from spare part and oil sale requires special selling skills
- Networking with smaller garages

In general, Indian auto companies can substantially improve the quality and performance of their employees, if their functional divisions or departments, plants and activity centers go through the following process reformation:

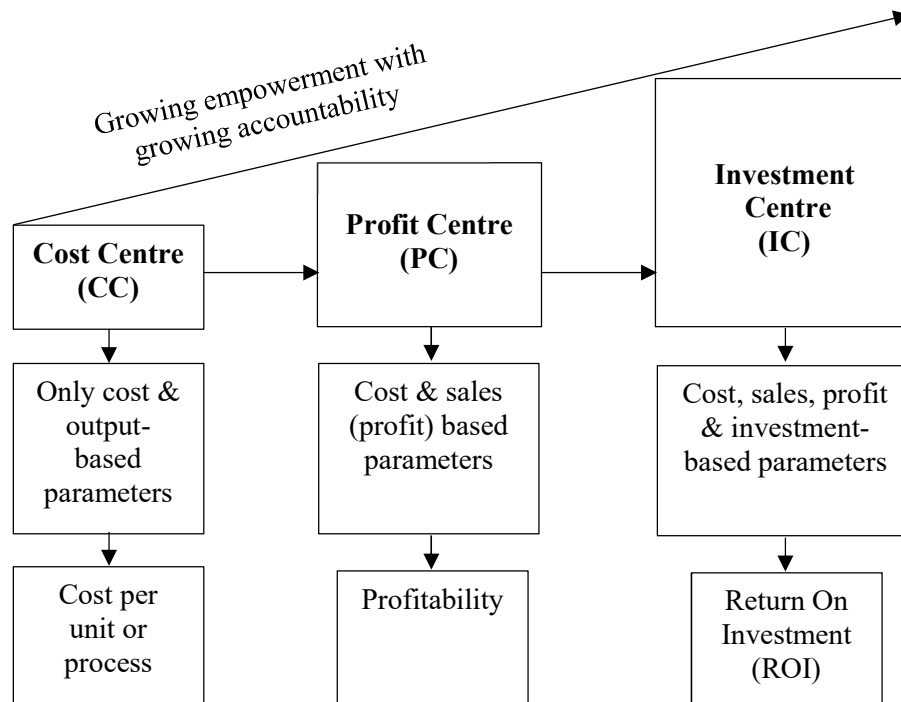


Figure 12

This transformation obviously will have to be conducted in a gradual manner which may be defined as follows:

- Stage 1: From CC to PC: Notional Conversion
- Stage 2: From CC to partially real PC & partially notional PC
- Stage 3: From CC to completely real PC
- Stage 4: From PC to notional IC
- Stage 5: From PC to real IC

This transformation will always require a team performance of the business head, HR executive and finance executive. The business head will define the suitable dose of transformation, the finance executive will convert operational and qualitative parameters into financial parameters and the HR executive will facilitate the entire process of transformation with his human resource management skills. This entire exercise of transformation should offer following advantages to the automobile industry:

- Entrepreneurship across the organization
- Better and real market-based benchmarking

- Multiskilling and horizontal deployment of employees
- Strategic cost and asset management
- Subordinate functions get better treated
- Maximization of ROI

4: Conclusion

At the end of this paper, I pragmatically reach a conclusion that the Indian automobile companies and their foreign counterparts operating in India should regularly conduct the following five exercises which should define the next or higher milestones of comprehensive reforms:

- Analysis and measurement of organizational effectiveness (such analysis should be done through maximum possible angles)
- Regular review of the strategic plan to ascertain the quality and quantum of strategy execution and plan for alternate strategies
- Review cum audit of PMS to ascertain the relevance of various employee-related policies, processes and programs
- Periodic valuation of business, brands and human resources (to ascertain the exact addition made to shareholder value, earning power of major brands and capabilities of the employees)
- Technology Audit to measure the overall effectiveness of present technology in place and the scope for improving or replacing it.

Indian automobile companies, their foreign counterparts in India and their business associates can prove to be (i) growth engines for Indian economy (ii) global hub for automobile research and experimentation (iii) providers of indicators of the growth in various sectors of the economy and (iv) change makers in technology, human performance and the overall ecosystem

If India is a ‘happening economy’ for the world, so also should be her ‘automobile industry’!

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