

# AUTOMOBILES AUTOMATION'S EMERGING MARKET WITH REFERENCE TO TESLA MOTORS.

Rishabh Krishna, Dr Azara Ishrat  
Student, Assistant professor  
Business School  
Amity University, Lucknow, India

**Abstract:** With rapid rise in the pollution levels & no sustainable technology to reverse the cycle of cataclysm. Many new emerging technology companies have emerged to solve this problem. The report basically focuses the way in these companies market their product and how the government incentivises these efforts by the companies. It also focuses on how this change affects the ecosystem of the market & what are the difficulties that these companies face in other domains. The amalgamation of such a strategy is a form of GREEN MARKETING which is done by the company as well as the government in order for the customer to buy the products which is not only good for them but is also environmental friendly . This intern would usher an era of product and services that would benefit the environment & the public. The report is specifically based on how companies such as Tesla are using green marketing as one of the methods to market their product and how the promotion of such product would improve our lives for the better.

## Chapter 1

### INTRODUCTION

With regards to the topic, the subject enters in the domain of Green /Environmental marketing. Green / Environmental marketing is an approach used towards the products & services which are used for the benefit of the environment. Usually the decisions made by the company are in the favour of the environment and its minimum disturbance. Reuse – Reduce –Recycle is one of the many elementary approach used by these companies.

In the past many scientist have revealed that Earth is not in a very good condition because of the activities which are performed by the humans. Factories & there emission are mainly to be blamed for this. Looking at this & many other disturbances many countries joined hands and have signed treaty to take an action against this alarming situation. In due course of time many companies have also felt the need to do the same.

This basically led to the birth of environmental approach used by the companies in making their products & ultimately marketing was used as a means to promote all this.

Many countries are supporting such drive from the companies end, as it is a positive step towards a brighter future.

Below we see the current landscape of the automobile industry.



## Chapter 2

### Reasons for the switch

The conventional source of energy can be defined as the non-renewable source of energy. By nature these energy sources are scarce.

The most prominent form of these sources is coal, petrol, Lignite.

In case of coal, the quantity extracted during 1950-51 was 13 million tons but during the year

2005-06 it was somewhere around 343 million tons.

In case of Lignite, it was around 20.44 million tons, in the year 2005-06.

India currently is the 4<sup>th</sup> largest producer of coal in the world. This process also provides job for nearly 7 lakh workers. According to the current estimates of the researchers this extraction process can only last for 130 years. As coal is limited in quantity it has to end someday.

### Oil and Natural gas

Oil is considered as liquid gold and is currently one of the most valuable resources in the world.

Widely used in ships, trains, automobiles, planes. India has a small amount of oil reserves.

During the 1950-51, India only produces 0.3 million tonnes which spikes to a whopping 32.4 million tonnes in 2000-01. Given the fact that oil is such an important resource and has a great economic value, India can only extract it for the next 25-30 years. Given the situation that India has oil in limited quantity.

With the above set of statement we realize the limitation in the quantity of such resources.

At a global level we see that oil can last for the next 150 years .In case of coal and its other sect of resources, the chance of consistent extraction can last up to 200 years.

We realize that with the alarming rate of extinction of such resources, evolution in technology is a must. With the current scenario a new emerging market has been taking birth in the field of automotive, The electric vehicles are the successor to the conventional petroleum vehicles. By definition electric cars are automobiles which move or propel using electric motor. The earliest possible electric car was created in 1880's. But with the growing concern in oil prices and the pollution factor which is associated with it a boom in the field electric automotive began

### Concerned Domain of Green Marketing

1. Promotion & production of pure and healthy products are taken into consideration. Such products are usually not tainted in any manner & are not harming human life & health.
2. They deal with their customer in a fair & Just manner, thereby not breaking their trust from the brand. This ultimately results in a healthy relationship between the corporate and the end consumer / customer.
3. All the above process is not done at the expense of environment. Environment is given a major priority in all this work management cycle thereby changing the very nature of production & marketing of the product.

## ACTIVE PARTICIPATION

In the recent time such drastic steps have been taken by the corporate giants to basically recycle their own waste. This step helps in reducing the effective cost of the products thereby making it cheaper & more accessible to the masses.

Companies like AAPLE have designed a robot named LIAM which basically helps in segregation of the useful parts from old electronics & use it in the newer ones. Things such as costly metals are in the priority of such things.

Different companies use different iteration of machines for the reuse of different types of products. This support the cause of SAARC, THE WORLD BANK, UNO, WHO; & there idea to support Green / Environmental Marketing.

## ORGANIZATIONAL PROFILE OF THE COMPANY: TESLA MOTORS.

### The Background

Tesla also called TESLA MOTORS is basically a car manufacturing company. Its secondary activities enter the domain of energy storage and creation of advance solar panel system.

Tesla is an American carmaker. The company was founded in 2003.

The area was specialization lays in making electric cars, lithium ion batteries of different sorts, making residential solar panels & storing this type of energy in advanced eco-friendly vessels.

The company is situated in PALO ALTO, California, U.S.A.

The founding members of the company includes:-

**ELON MUSK**

**J.B STRAUBEL**

**MARTIN EBERHARD**

**IAN WRIGHT**

**MARC TARPENNING.**

### The Promoter

The face of the company is **ELON MUSK**.

He is a Canadian American by origin. Musk is a business investor, inventor & engineer.

In his lifetime the man has developed, funded & partnered with many companies under his name. All these have a different success story to tell.

Elon is the founder of X.com now known as PAYPAL. He is the founder & CEO of Tesla Motors, a car manufacturer. He is also the founder of SPACE X a company dedicated toward building rockets & other space machinery.

He is the co-chairman of OPEN AI & NERURA LINK.

He has also co-founded solar city & zip 2. He has also developed the basic schematics of HYPERLOOP but made it open source as he was engaged with his current tasks hence he gave this opportunity to other budding thinkers to give their own version to his vision.

The major projects that Musk started were to improve the quality & standard of human life as he was not very pleased with the conventional approach of things taking place. TESLA & SPACE X are basically part of that vision.

Musk was worried that the way things are moving can result in human extinction. In order to prevent that from happening he developed these alternate methods for sustenance.

His level of preparedness has reached such an extent that he has already thought of building a space colony in Mars should the need arise.

Today the efforts that he has made have made him in the FORBS LIST OF MOST POWERFULL PEOPLE, giving him the 21<sup>st</sup> spot in the list.

The man's achievement has made developed his personal net worth to \$16.3billion US Dollar, making him the 89<sup>th</sup> richest man.

### Chapter 3

#### Features of the Product

All the TESLA cars are electric in nature therefore fuel consumption is zero making the product completely emission free.

Now the car is made from a comparatively lighter & more pure metals making it lighter in nature; what adds to this is that there is no V6 or V8 petrol /diesel engine making the car significantly lighter.

Due to the absence of heavy engine in the car more leg & boot space is provided at the front as well as the back putting it in the league of SUVs when it comes to space management.

There are currently 8 airbags, traction control system & one of the best i.e. 5 star level crash proof system with the car making it one of the safest in the market under any category .

As the car has an electric in nature & doesn't need gradual acceleration, high levels of speeds are easily accessible at a very short amount of time. Stopping time of the car is also following the same phenomena making the car completely in driver's control.

Tesla has a feature of autopilot where the driver can leave the driving system in the hands of the AI & can relax if he is handling the car for a very long period of time; this is the only car in the entire commercial car making industry to have a feature this futuristic.

The entire dashboard of the car only has a huge tablet which can help u navigate along the car such as temperature, drivers control, navigation, calls etc.

This gives the car a more electronic device orientation rather than an automotive appeal, as the moment the software of the car is updated so is the functionality.

#### Organization Structure

Tesla as an organization has a pretty well developed organizational structure. The company has been developed by people have an experience of developing companies in past which have helped them in giving an advantage when developing Tesla.

Features of the structure:-

Proper centralization network. This is one of the key features which are the elementary function of the company. As orders are moved without any type of hindrance this helps in achieving the goals placed by the company.

Minimal division on the basis of region helps in proper division of workforce, In case of Tesla this helps in creation of dedicated parts from different places with some areas providing supervision of such working.

Now the company is relatively young when standing against its competition.

This is core reason that the company has only 3-4 workstations globally which helps in maintaining the effective cost of the machine. This also helps the company for trading purposes internationally.

The basic design of plan & activities are on the principle of centralization. Things such as design plan, working order of people, no of people required for a task fall in this category.

## Competitors

Even though the company has a unique standing with respect to its products. At present scenario in commercial level the company still faces a frontal assault from a couple of old & new companies. Here is the list of a few companies along with the products:-

Nissan



Nissan LEAF is a 5 door hatchback. This particular car is Nissan's future prospect for the consumers in the field of electrical technology.

TOYOTA



Toyota PRIUS is one of the first fusion hybrid car on the street. The car is the choice of many because of its fuel economy. Its in the market since 1997 proving its mettle in the auto sector.

FARADY FUTURE



Faraday Future is an American start-up founded in 2014. The company is focused in creating smart vehicles, these possess a direct competition to TESLA as they are only company other than TESLA to nearly achieve their vision.

## LUCID MOTORS



The product by the company namely LUCID AIR is under the category of luxury electric automotive. This particular variant is challenging the likes of all the upper crest cars of Mercedes, BMW, AUDI, and Jaguar. Hence this company will be a rival for TESLA if a linear growth is maintained by the company.

These are some of the rivals that TESLA is currently facing. The above are not arranged according to price but according to popularity based on the global trend and affordability factor.

## SWOT Analysis

Let us first understand what Swot analysis actually means. Swot analysis is a process that understands the strength, weakness, Opportunities and threat of an organization.

Swot analysis is basically that analytical framework which helps company's internal as well as external matters. Internal may include workforce management & leadership.

External can include things such as a surge or fall in price, entry or exit of a competition.

Using environmental data a company can evaluate many aspects such as potential opportunities, mergers, evolution of products etc.



## STRENGTH

- 1) Tesla currently positioned itself as a very unique and new brand in the automotive industry. The last company to produce an automobile on a mass production level was nearly 95 years old. This is a shift in tradition and technology as we know it gives tesla an edge over conventional automotive.
- 2) The powertrain consist of battery, gearbox, software automated system , gearsystem, The elevation is power is not gradual like a conventional car like a petrol or diesel but instantaneous. This helps in improving the performance as well maintaining better control

Tesla has a Variety of products up its sleeves, such as panels etc which were developed for domestic use in the year 2013 and were later commercialised in the year 2014.

They are provided in the blocks of 100kwh & they offer supply up to 100mwh.

The strong marketing tactics and policies that tesla has been using for its products has helped tesla realize their dream of selling 50,595 in 2015 which has boomed to 79,865

In the year 2016 making it a rise of 10.5% app. in sales.

Currently in 2017, the tesla model 3 has been stealing the spotlight from its predecessors

The car comes at a price tag of \$35,000 which is almost half the cost. People In the entry level segment are eagerly waiting on further update on this variant. This can help the company in major fortune jump & financial stability.

Apart from all the above facilities, tesla also has its own service station and charging points

Across the country where they cater their products. This shows a rise in consumer satisfaction which intern results in an increase in sales per year.

The service and sales also get a real time data which the company can use for feedback purpose and also improve their service operations.

Tesla is currently building a new GIGAFACTORY in Nevada, USA. The purpose of this construction is battery integration at one place which will save the time and hassle of getting parts delivered from a Varsity of sources. This will make everything in-house which would eventually help in reducing the cost of the car and other products.

#### Weakness

Unlike many hybrid vehicle which depend on both the electric and petrol fusion engine which provides them double the output , Tesla are fully dependent on electricity i.e. the company has developed battery packs power bank. The company has yet not come with a permanent solution to that problem which has made its situation a bit vulnerable in the global market as of now.

Tesla is a very young company which has a fully fledged automatic car manufacturing mega factory, the company has less experience in this front when you compare it against its counterparts. Before tesla the last new company in the field of this industry is currently 95 years old. Tesla also lacks the experience in dealing with things such as maintaining a multibrand, dealing with things such as market cannibalism because of multibrand.

They do face some problems in operations and maintaining the deadline for products.

The company has also not yet released its mass market vehicle yet which is the TESLA MODEL 3. The company claims the launch of the vehicle in late 2017 which still shows that it has a long way to go if it needs to step up its game and stand with the big guns of the automotive industry.

On the financial side of things the company has not able to mint a huge margin of profits but on the other hand the liability is slowly increasing as well. Tesla is spending heavily on its assets but on the operation side of things, the company is struggling in a significantly.

There is also a deficiency in their working capital. There is also an increase in the liability side of things. The company has raised a sum of \$1.5billion for its MODEL 3.

Currently tesla is suffering from a debt of \$18billion. The company wishes to make a comeback with the MODEL3 as it's a relatively lower price car and would therefore touch a larger number of people.

#### Opportunities

As discussed earlier, we know that the current scenario for fossil fuels and non-renewable energy is at a dire situation. Currently most of the car makers are heavily dependent on their petrol or diesel engine. On the contrary we realize that TESLA is 100% electric oriented vehicle which gives it an edge over other companies. The only car which stands a chance is the Toyota Prius which has a fusion engine and is not completely electric.

Other electric companies such as FARADY FUTURE & LUCID AIR lack the technology and mass production ability which gives TESLA an edge over companies with similar nature. This actually makes TESLA a market leader in the electric automation industry.

Countries like Norway are a perfect example of how a country can change its ways & upgrade to a more environmental way of living. TESLA in Norway has made a unique world record of most number of products ever sold in a month. This shows the governments inclination toward the products. They actually have a separate reserve of money allotted for this green movement.

The report which MORGAN STANLEE has released has stated that at current rate it has the potential to evolve into a huge transport & infra company which will be capable to take care with more than millions of vehicles 'and its users / owners, this will not only provide them with the data to evolve but will also help them in management and achieve excellence out of it.

In order to make tesla a more accessible car & affordable car, the company is working day and night to achieve this dram. The new model 3 will be quoted somewhere between \$23,000 making it one of the cheapest family car. This will pose a challenge to carmakers such as BMW, Mercedes, Nissan,

#### Threats

##### Funding:-

There is a concern among the investors that the company might not able to keep its promise of delivering its manufactured units in the coming months. According to the projected data by the company it will be capable of delivering 5, 00,000 vehicles' by 2018. Most of the investors and financial analyst are left to wonder how such as leap is possible.

The company currently has \$1.5 billion has its running or cash to spend. The company believes it needs more fund through the fund raising events which would financially support the company's future ambitions.

##### Competition:-

With the current surge in technological advancements it is not a surprise that tesla is in a tough spot.

Many car makers have / are using fusion high quality petrol & electric motors which is giving them an edge in the current scenario.

Many companies such as NISSANS leaf, Mahindra's Riva and the BOLT by Chevy are in this business for a longer time and have had more experience in this field, this can be a hindrance for tesla.

Companies such as DAIMLER have more resources and expertise thanks to the parent organization that is the Mercedes.

##### Geological:-

After the BREXIT incident, it has been difficult for tesla to operate because NETHERLAND, AMSTERDAM & TILBURG have been its base of operations. Now with Netherland gone because of the exit of U.K, the cross border trade will be more difficult which would end up increasing the price of raw material which intern would increase the price of the car in EUROPE.

##### Supplies:-

Tesla has a limited supplier's base as it's a newer company in the industry. This makes it difficult to arrange for all the spare parts in every corner of the country. Tesla is constantly progressing to omit such problems in the forcible future but all these things take time and proper management to minimize the problem.



## PESTEL analysis



It is basically a framework which helps the management and marketing department of a company to understand about the micro and the macro economic factors which would affect the future of the organization. Such an analysis is usually opted by a company when it makes an entry in a new market. In case of Tesla it is highly applicable because it is a relatively newer organization with little resources to spare. Therefore it makes a lot of sense to opt for this method so as to hunt for a compliant market.

### Political factors

Tesla's political success in the USA is all thanks to the policies which have been in the company's favour since its creation. Mr Barack Obama the former PRESIDENT OF THE UNITED STATES OF AMERICA had then issued the strictest environmental laws which is considered to be one of his greatest actions. This supported the company in many ways. The government was very much interested in alternate sources of energy and its commercial & domestic uses, TESLA just handed them the answer in form of their invention. The company was granted \$465 million loan from the department of energy for the claim the company made. The company paid off the loan & this also helped them in attracting more investors & thus helping in building the company's reputation.

Now as the company is producing electric vehicles, many kinds of tax reduction is offered to the people who are purchasing as it is good for the nature, the federal government offered a rebate of \$7500 on purchase of such vehicles.

Other than this, another huge step taken by the company is the elimination of dealership. This will help in the reduction of the prices of the car & keep the business between the customers & the corporate. This will simplify things to a great extent.

Currently the area where the company operates has not seen any political instability, this helps in the smooth functioning of things.

### Economical

After the depression period, things like 0% finance were used to attract people to buy cars. This price was then added to the base price of the car without the customer realizing it. After the depression in 2008 such schemes and many other helped in the rise of production of cars as more and more people are buying them. Tesla being a small company held its own and came out of the depression with a rise in stock prices and the trust of people that the company will have a brighter future in the coming days even though the company is very small.

The main economic factors that actually compel an individual into buying one of these toys is the battery output these cars boast. The system is actually so self-sufficient that it charges when the engine starts. The annual cost of keeping a Tesla is \$400 as compared to that, the annual cost of keeping a gas vehicle of the same range can cost more than \$1159 per year. This makes it a better deal. Tesla faces a financial stability in the Asian region because of the economy and other financial issues. Despite in these relatively remote areas this PESTEL ANALYSIS will actually help the company understand its budding market in a much better manner.

## Social

In today's era we know that global pollution is a very big issue, more serious than people actually understand. A majority of the people support the idea of sustainable living by substituting the conventional sources of energy into green energy. Even though in the past a significant amount of loans have been provided to the companies in the past, only a few including TESLA have actually come up with an answer, a solution. By investing in such companies, a growth in the developing sector is also taking place, this intern provide new jobs and is beneficial for the economy as well as the society. The other aspect of using such a car is that emission levels are almost none. To boost the acceptance rate of such a technology, local civil bodies provides other smaller benefits to such automobiles. Things such as discount on toll fee, no parking fee, free charge point in some places. This will actually result in positive publicity for the technology and the companies which are supporting them.

## Technological

This aspect of PESTEL ANALYSIS helps us to understand how technology plays a major role in the macro –environment. The company was founded in the heart of SILICON VALLEY which shows how much technology oriented the company truly is as technology is the very basis of Tesla.

Battery plays a huge role in the electric system. The main battery consists of small mini cells which support the big battery that runs the system. The cars aerodynamic is such that it would help the car to perform well thereby increasing its battery performance. The battery charges itself to some extent using its own propulsion system. This actually saves electricity when charged the next time thereby increasing the range of the car. The average range increase is up to 40-50%

The car that TESLA has designed is more app based than hardware oriented. The company has installed most of the hardware depending upon its upcoming plans. The car is just given the update from the company's end which would help in the utilization of its hardware in a much better manner; things like AUTOPILOT are just some of its significant upgrade.

The car also has a strong integration with the leading OS designers such as ANDROID & APPLE.

This makes the car even more intuitive & custom itself depending upon its owner. Surprisingly TESLA is faster than many American Muscle such as the SRT challenger, THE HELLCAT, MUSTANG GT by FORD MOTORS. This proves the fact that electric cars can be for the SPEED FREAKS as well.

This can help & change the perception of general petrol heads who are still obsessed with petrol & diesel engines.

## Environmental

The car is doing much favour to the already tormented planet we stay in. All Tesla cars try to utilize their own electricity up to 20%. Tesla is now developing battery packs which can convert solar energy into electrical energy. This will help in keeping the car in a more eco-friendly domain.

Tesla is also emission free; when the engine starts it makes zero noise as the car is petrol free .This gives the car an edge over other counterparts. The cars also use a lighter version of alloy & recycled high grade plastic which supports the environmental cause.

The best part in the battery department is that the company uses many small number of Lithium ion battery which are arranged in a set series. So if one is not functional it can be changed rather than changing the entire unit.

Most of the tesla mega factory and charge station use wind and solar energy in abundance which helps in keeping the power as clean as possible.

Currently there are 2:6 ratios of power stations in the USA. This actually motivates the customers into buying a Tesla.

## Legal

This part of the PESTEL ANALYSIS deals with the legalities with respect to the company and the nature of product.

TESLA currently has more than a 100 patent under its name which shows the uniqueness of the company. Many countries have the energy consumption regulations which favours the company as it is eco-friendly. In recent events there has been some protocols which a few number of states have launched which is concerned with the sales of cars from dealerships rather than buying it directly from the customer. The problem with this situation is that not only the car is made more costly because the dealer mints a lot of money from the sales but the repairs will be also affected because of the cost.

In many countries such as NORWAY, U.K, such variety of cars are given a more liberal approach when it comes to trade and sales. This not only helps the company but the local customers as well.

## Chapter 4

### PRESENTATION OF DATA AND ANALYSIS

#### Conclusion

The SWOT &PESTEL ANALYSIS helps us understand that companies such as TESLA are not only help in preserving the environment but also helping the economy invest in a different direction. This particular domain was unexplored for a very long time, with the diminishing status situation the oil, gasoline & coal are dealing with. Such attempts are very much welcome & are needed in the future of automation.

In a bloomed economy it is a welcome change as the rates of gas is skyrocketing. Places such as Norway, U.K, and the U.S.A are some of the perfect examples of how a government organization's plan and policies can help bring the required change in this field.

In the developing economy the lower range model of electric cars can be accepted by many.

Countries like china will have the highest average of middle class men by 2020. This is the perfect opportunity for the company to enter into a newer market.

This will also motivate companies like FARADY FUTURE to take such steps & propel an economy with electric automotive as its epicentre.

Other companies such as BMW, JEEP, and AUDI will also see the need to change if the company has to secure its existence.

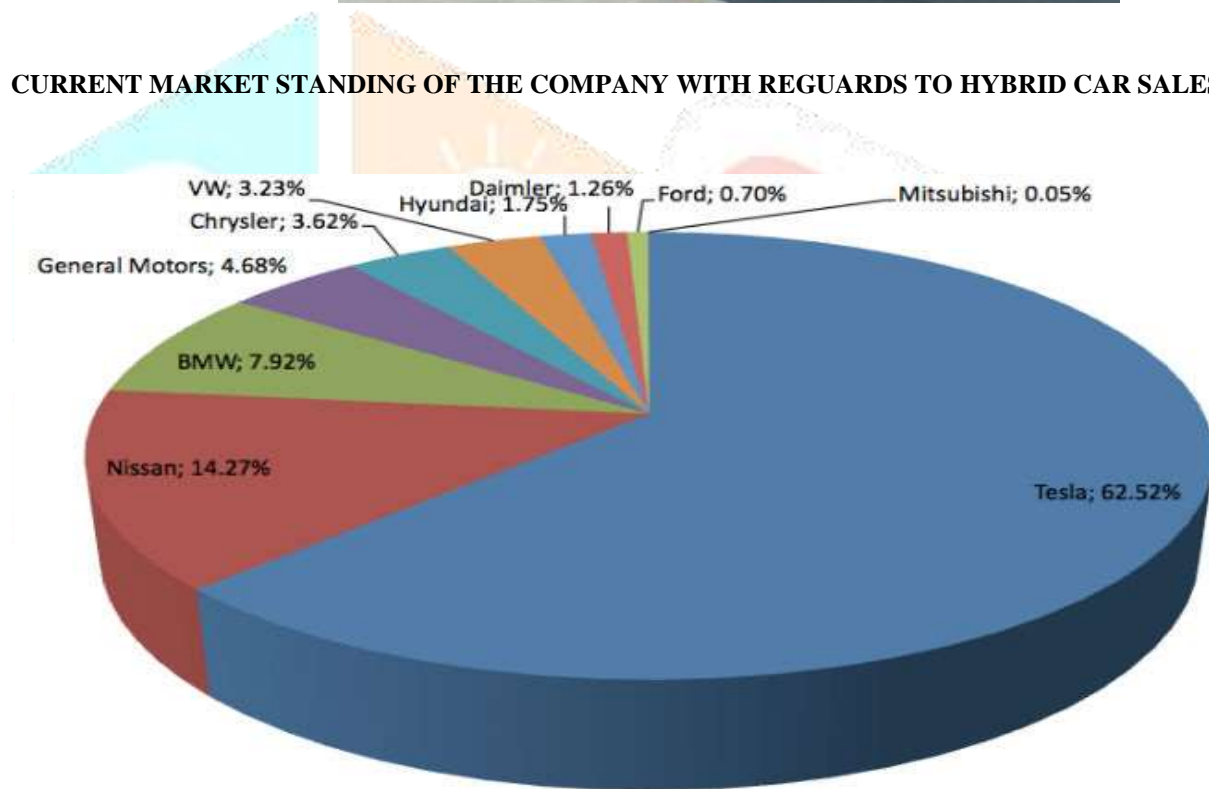
Such innovations are ultimately beneficial for the local people who have the luxury of then choosing the best out of the majority, making it a win – win situation in terms of price for the car and the energy used to propel it.

### CONCERNING ISSUE WITH REGARDS TO ELECTRIC VEHICALS

The most concerning issue with electric autos is their reliance on costly, overwhelming batteries. Those batteries inevitably turn sour, prompting a colossal amount of waste. Enter hydrogen power devices. They change over hydrogen fuel into an electric current, and, not at all like batteries, don't lose their charge as long as there's fuel. The issue is that the technology is as yet immature. It's still years from being sufficiently shabby for the mass market, and the foundation is even less accessible than electric. More consideration and more significance put after enhancing power devices can prompt a superior option than both ignition and electric autos.



**CURRENT MARKET STANDING OF THE COMPANY WITH REGARDS TO HYBRID CAR SALES.**

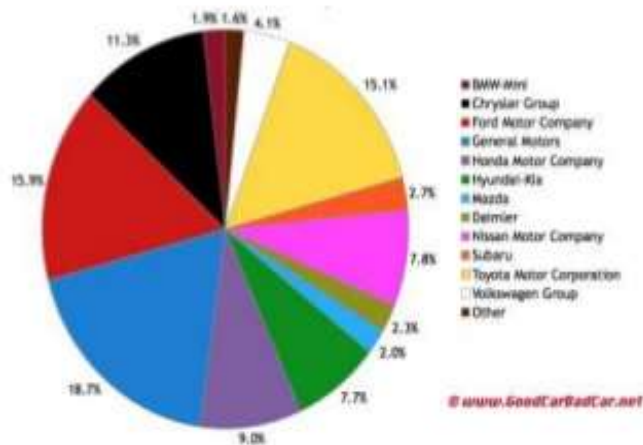


**FUTURE PROSPECT OF THE COMPANY WITH REGUARS TO GENERL MOTOR INDUSTRY**

## Market Share



US Auto Industry Markets Share



- Many players in the auto industry
- Ford, GM, Chrysler, and Toyota control over 60% of the market
- 97% of the vehicles in the industry utilize traditional combustion engines
- Nearly 3% utilize hybrid technology
- .34% of autos are plug in EV
- Tesla commands .01% of the entire auto industry
- Growth in hybrid and EV market will depend largely on future oil prices, consumer sentiment, costs and R&D
  - Recent reductions in oil and gas prices puts less strain on manufacturers and consumers

## Bibliography

- Liao, C., Chuang, S. H., & To, P. L. (2011). How knowledge management mediates the relationship between environment and organizational structure. *Journal of Business Research*, 64(7), 728-736.
- [Management – Tesla Motors.](#)
- Menguc, B., & Auh, S. (2010). Development and return on execution of product innovation capabilities: The role of organizational structure. *Industrial marketing management*, 39(5), 820-831.
- [Tesla Motors, Inc. Form 10-K](#)
- Wikipedia
- National geographic
- YouTube
- Online bloggers
- Tertiary sources including magazine, newspapers etc.