India is the 4th largest automobile market in the world contributing 4% to global sales of passenger and commercial vehicles. The automotive industry accounts for 7.1% of the GDP and had a growth rate of 14.41% in 2017-18. However, when it comes to Battery Electric Vehicles (BEVs), it contributes a mere 0.1% of global sales.

The penetration of BEV in India is less than 0.2%. We wanted to understand how to increase this number and find out why people are wary of buying an electric vehicle (EV).

From our primary research we found 3 major problems, which are:
1. How to reduce battery charging time (from 1.5hrs for fast charger and 8-9hrs for normal ones)
2. Cost of the battery itself
3. Infrastructure supporting battery charging.

Hence we propose the use of Battery Swapping technology and outsourcing of charging infrastructure to Power generation companies or companies working in the same sector, for Eg. Sun Mobility.

Battery contributes a significant proportion of the cost, which is around Rs 3-4 lakhs.

Battery swapping will enable them to reduce this price significantly and also reduce or eradicate the problem of long charging time. This will also push other automakers to follow and build a standardized environment for battery swapping, thus enabling the shift to an all electric vehicle economy.

Automakers can tie-up with companies like Sun mobility who are already in this space and take advantage of the available infrastructure. This will be beneficial for both the consumer and the manufacturer, as it will reduce the battery acquisition cost for the manufacturer and will allow the consumer to pay for the range he/she has used the battery for.

BMC MODEL

India contributes a mere 0.1% of global electric car sales. The penetration of EVs in India is less than 0.2%. Battery range, charging time and availability of charging stations are some of the impediment factors for the consumer, while battery cost, No standardized infrastructure and No supporting government policies are major impediment factors for the manufacturers.

We have to design a model which will satisfy the latent needs of the consumers and giving them a hassle free experience for the investment they will do.

Electricity for EVs have to be given from renewable sources of energy so that vehicles prove to be environmental friendly.

Solution of each identified Gap:
1) Charging time issue:
Battery swapping will reduce the waiting time of EV owner to 2-5 minutes from 2-8 hours.

2) Infrastructural issues:
Tie-ups with petrol station/malls/parking areas/offices for charging or swapping stations will reduce infrastructure unavailability issues.

3) Reducing Battery Cost:
Around 33-35% of the cost goes in battery cost. It will take ownership and maintenance of this battery, then cost of the vehicle is reduced by 33-35%.

WHY SHOULD INVESTOR INVEST IN YOUR IDEA???

1) EV market is expected to grow in coming years and Indian government is encouraging automobile industries to manufacture EVs to reduce the emission rate.
2) Battery swapping can reduce the waiting time of customer from hours to few minutes.
3) Outsourcing the battery swapping management and related infrastructure can reduce the price of EV by 30-35% without hassle of managing this system.
4) Overall its attractive value proposition offered to consumers and automobile companies can penetrate in the market.

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