Student Name:

Professor Monica Matthew

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Manufacturing Alternate Powered Vehicles

Why would consumers or manufacturers prefer to use (APVs) whether it is electric, or hybrid vehicles compared to fuel/gasoline powered vehicles? The alternate powered vehicles have benefits to the consumers using them and to the manufacturers too. To the manufacturers they will be minimizing pollution by reducing the emissions which is caused mostly by the gasoline that we use in the vehicles and thus they will be enabling sustainability to our environment (U.S. Department of Energy, Alternative Fuel Vehicles: Department of Energy, n.d.). To the consumers the alternate vehicles are cost efficient as they will be saving from the fuel costs and the maintenance of the electric vehicles and hybrid vehicles is lower compared to the gasoline/diesel powered vehicles (U.S. Department of Energy, 2021). My goal in this paper is to persuade the automobile manufacturers to lean more towards manufacturing Alternate Powered Vehicles by highlighting the benefits of this to both to the manufacturer and the consumers.

As sustainability and reduction of emissions continue to be a concern for the globe, the sales of battery electric vehicles continue to increase. According to a report done by *Breiter et al., (2020),* Battery Electric Vehicles (BEV) can reduce the vehicle total cost by 2 to 3 percent when done in house compared with an outsourcing strategy. According to Datar it is important for companies to understand their critical capabilities and how to deliver value to customers (Datar & Madhav, 2021). With the continued development of Electric vehicles, companies may increase sales and reduce costs, according to research that was recently done by *Breiter et al., (2020),* shows R&D Excellence, Flexible Manufacturing and Value-chain integration as a way of major cost reduction and as well increasing the sales. The consumer growing interest towards electric vehicles and the decline in battery prices has contributed to this growth and helped the market grow annually to more than 40 percent from 2016 through 2019 (Breiter et al., 2020). From our textbook we also learn that value-chain analysis is one of the key success factors in cost structuring. With the Electric vehicles we see that R&D is highly used in generating and experimenting the product (Datar & Madhav, 2021).

Why APVs

Benefits to Manufacturers: Since the Hybrid cars are now more common and becoming more popular even though most people lack the knowledge of whether the hybrid vehicles are good compared to gasoline powered vehicles, the manufacturers are receiving incentives from the government from the manufacturing and selling the electric and or hybrid vehicles (Conserve Energy Future, 2021). Another benefit to the manufacturers is that some of the states and most cities are switching to become more environmental responsible and thus buying or switching their public transportation and service vehicles to hybrid vehicles (Conserve Energy Future, 2021), which is an advantage to the manufacturers that are already selling the hybrid or electric vehicles as they will increase their sales. As the states also move to becoming more sustainable and transition to zero-emissions transportation system and for Washington State to ban the sale of new fossil fuel-powered vehicles by 2030 (Hill, 2021), this is an advantage to the manufacturers as it will help increase their production to meet the demand and thus increasing their sales. Which means if the manufacturers have high fixed cost, due to the projected increase in demand, manufacturers will increase their production and thus this will help bring their costs down (Datar & Rajan, 2021).

Benefits to Consumers: Hybrid vehicles run on electric motor and gasoline engine (twin powered engine), it helps reduce the vehicles’ fuel consumption and conserves the energy which ensures that we have more clean air. Due to less fuel consumption and less dependence on fossil fuels it will help in reducing the gasoline price in the domestic market (Conserve Energy Future, 2021). With the hybrid vehicles you do not have to recharge your battery as the battery will recharge each time you apply the brakes while driving (Conserve Energy Future, 2021), this I would say is one of the reasons why the hybrid vehicles are better compared to other type of vehicles because it is saving you on the gasoline consumption as well as time while stopping to recharge your battery. Due to the demand of the hybrid vehicles as a consumer if you want to resell your vehicle you will have a higher-than-average resale value (Conserve Energy Future, 2021), which is not the case with the fossil fuel vehicles as they depreciate at a higher rate and less buyers are looking to buying the resale vehicles.

Even though there are advantages of manufacturing more of hybrid and or electric vehicles, there are also cons that come with it and the biggest drawback is that they are more expensive than regular petrol vehicles with the difference being $5,000 to $10,000 but this extra amount can be offset with the tax exemptions that the consumer can receive from the government and the lower running costs (Conserve Energy Future, 2021).

Growth: The structural cost change of moving vehicles from full gas vehicles to Hybrid Electric Vehicles which uses more than one type of power source, I would say is one of the changes that will continue to see growth even in the coming days. According to the Hybrid vehicle market, the overall hybrid market is projected to grow at a CAGR of 8.94% and this is from 2018 through 2025 and thus reach 7,593 thousand units, this hybrid market rise is due to emission regulations and the demand for low or zero emissions, some of the governments also provide grants or tax rebates for the purchase of the hybrid vehicles (MarketAndMarkets, 2021). I would say that the manufacturers can use this to their advantage in production and cost structuring, with the development and growth of the hybrid electric vehicles and with the government pushing to more regulations of fuel efficiency and low or zero emissions.

Conclusion:

As the cost of producing the APVs is reducing as manufacturers find improved technologies and economies of scale to lower their costs and we also see that the manufacturers are now making profit on selling compared to several years back thus we can say that manufacturers need to make decisions based on their costs and the demand of the hybrid vehicles. We can also conclude that the APVs vehicles are more fuel efficient and have lower emissions compared to gasoline or diesel vehicles.

As more people become more concerned with the environmental sustainability, with the increase of price for the gas, and with the state government implementing more regulations, the demand for the alternate powered vehicles is rising and the manufacturers can take this to their advantage and start planning on how to control their capacity costs.

The managers of the automotive manufacturing industries are faced with a decision to make more alternate powered vehicles. The problem is already identified here as the rising cost of gas and the emissions level that need to be reduced, but the uncertainty is if the demand for the APVs will continue to rise. The manufacturers can continue to gather information from the sales that they have made, and this will help them make the predictions for the future and on what to improve to meet the customer’s needs, for the future predictions, I would say that the manufacturers are at an advantage here as more states move to regulate strict rules on emissions and finally on the last decision process step the manufacturers would need to plan on implementing their decision, budgeting and continue to evaluate their performance as they learn more on how to improve the manufacturing process (Datar & Madhav, 2021). According to Linkov (2019), the EV market share is expected to rise with a 7.6 percent growth of the EV sales in the U.S by 2025 which will be driven by the expanding infrastructure, consumer interest and the government regulations. Thus, I see this as an opportunity for manufacturers to start planning and budgeting their costs with the goal of meeting this growth. I would conclude by proposing that the automotive manufacturers move or lean more on manufacturing alternate powered vehicles.

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