Technological forces of cars industry

Technological Forces in the Automobile industry With the world economy in a downturn, the automobile industry is facing a period of slow sales and tight consumer budgets. This will mandate that the technological advancements made to the automobile will be done with the consumer's limited budget in mind. One of the factors impacting the cost of operating a motor vehicle is the cost of fuel. This concern over cost is also accompanied by the new social attitudes that desire a sustainable and green product. New technological innovations in automobiles will be centered around new fuels systems and new power sources. In addition, new materials that make the car lighter will enable the manufacturers to increase fuel efficiency whether they are powered by gasoline, electricity, or flex fuels. Technological forces will result in cars that go farther for less cost.

Electricity is the fuel of choice for many people that see it as sustainable and environmentally friendly. It can be produced from solar or wind and can utilize hydrogen through the use of fuel cells. However, the battery has been the weak component in the system. They are traditionally heavy, dirty, have a limited storage capacity, and a short lifespan. Lithium Ion batteries do offer some promise as improvements have been made in recent years. Don Hillebrand, director of the Center for Transportation Research at Argonne National Laboratory " believes that the ultimate medium for electric vehicles' batteries may well be lithium ion, the same material used today in batteries for laptop computers" (Orzech, 2007). Lithium Ion is poised to replace the existing battery technologies of lead-acid and nickel-metal-hydride, and the new high-end electric roadster Tesla is powered by 6800 lithium batteries.

As the industry bridges the gap to the totally electric automobile and a move away from gasoline, the interim period may be fuelled by natural gas.

Natural gas is a technology that has been largely overlooked due to a few disadvantages. For example, " There aren't enough stations selling natural gas to make them practical for cross-country drives. They don't have as much driving range as gasoline-powered cars. And their fuel tanks take up more space in the trunk of the cars" (Woodyard, 2007). However, the advantages of being clean, cheap, and having a US reserve of a sixty-year supply has made the technology more attractive in today's environment. New fuel technologies and power sources will additionally benefit the consumer through the use of lighter weight and stronger materials. The drawbacks that new fuels have in the way of limited range can be overcome by the use of lighter weight materials without sacrificing safety. Carbon fiber and Nanotechnology have resulted in new energy saving materials being incorporated into auto bodies that are lighter, stronger, and more durable than either plastic or metal (Lekas, 2005, p. 15). These lighter materials will result in a car that gets greater mileage and is longer lasting.

The use of new fuels and power sources will be critical to the design of the next generation automobile. Without the forces of these new technologies the auto industry would be facing a significant period of stagnation as consumers look to save money as well as the environment. New batteries, alternative fuels such as electricity and natural gas, and materials that result in a lighter weight automobile will be what it takes to pull the American consumer back into the new car showroom.

References

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