**Research Project: Advertisements on CAR’S Exterior**

**History:** The history of vehicles is very old, since the invention of wheels mankind has been using vehicles to transfer themselves as well as the things, they require from one place to other. Any vehicle consists of wheels and a force to run them. Earlier humans used cattle, horses, camels, etc. to power their vehicles thus the unit Horsepower is conventionally used in rating power of cars even in modern times.

The first self-propelled road vehicle was invented by Nicholas-Joseph Cugnot (1725-1804) in 1769 when he built a 3-wheeler steam pumped military tractor for the French Army. In 1808, [François Isaac de Rivaz](https://en.wikipedia.org/wiki/Fran%C3%A7ois_Isaac_de_Rivaz) designed the first car powered by an [internal combustion engine](https://en.wikipedia.org/wiki/Internal_combustion_engine) fueled by [hydrogen](https://en.wikipedia.org/wiki/Hydrogen). In 1832 Robert Anderson in Scotland started to experiment with electrically powering the vehicles. The cars have come into motion since 1886 when Karl Benz invented Motorwagen in Germany and created wagons which consumed Gasoline. Then 4-wheeler models and four-stroke engine- known as the Cannstatt-Daimler were developed around same timeline by Gottlieb Wilhelm Daimler (1834-1900) and Wilhelm Maybach (1846-1929). Similar engine was developed using diesel as fuel by [Rudolf Diesel](https://en.wikipedia.org/wiki/Rudolf_Diesel) in 1892. Since then, the automotive industry has been flourishing and prospering. Automobiles were soon available in 2-wheeler models which started the idea of individual commute. Buses and trains too progressed simultaneously along the same period for the purposes of cheap and community transportation.

Many ideas were derived from the automobile industry, established by Henry Ford in 1903 Ford Motor Company started to implement techniques for large-scale manufacturing of cars and large-scale management of an industrial manpower using assembly lines. There were then features like various meters and infotainment systems becoming popular in cars. The automotive sports also became popular thereafter.

**Scenario:** The automobile industry has now approached the verge of becoming completely electrically powered accounting to the reasons of depleting resources and increasing greenhouse effects and pollution. The future also delves into flying cars for which many prototypes are being tested by researchers in different parts of the globe.

The competition in the modern automotive sector is very stringent. The companies are working hard day-night to bring the maximum values in vehicles for their customers. The comparison terms for different car models or manufacturers have been upgraded to ADAS (Advanced Driver Assistance Systems), enhanced safety features, handling in high speed which traditionally were just on the basis of mileage, top speed, acceleration. Although the companies still try to incorporate those technologies in to meet the earlier as well as modern requirements of consumers.

Concomitantly alongside the automotive sector the electronics industry has been prospering. The handheld devices are almost becoming like organs for helping humans in communicating, gathering information or knowledge. Moreover, for entertainment, photography, the uses are countless. What is common in these devices is the user is constantly interfacing either a touch-screen or keypad to access the application he desires to. With the breaking through technological advancements the facilities which earlier were considered to be auxiliary and royal are being inculcated in the production process itself and have now become inseparable from the car manufacturing industry and it will surely impact the auto industry in future with the introduction of electric vehicles. The flying cars are also not a dream anymore they will also be soon in the showrooms.

Such a wide scope of vehicular traffic is expected to be the driving force for numerous businesses operations and will arise altogether new opportunities for entrepreneurs. The growing population and the rise for demand in individual and private traveling have been the root cause for high demand of cars and will contribute in future also. With around 82 million units of cars expected to be sold worldwide in 2018 the automotive sector is a choice for investment which has been favored by upcoming innovators as well as by established MNC giants. There have been efforts on different scales by various organizations across the globe by combining and mixing the knowledge of complementary domains to make the cars and the road transport as a whole on a wider scale, a more convenient and safer mode to travel and to transport things.

**Usability:** The number of vehicles on the road can be projected to be around 1.5 billion including trucks and obviously these consume space for parking of the total 149.6 million km square of earth’s land surface which can obviously be used in a charitable way at least if not in a productive manner. The former idea can be implemented by solutions such as multilevel parking, roof parking and many such innovations. **The latter is the main point of focus i.e. using the surface area of cars for productive purposes**. The space consumed by cars in the parking can be considered as loss of some fraction of earth’s area but once someone concentrates optimistically and deeply, he would notice that it in fact generates almost the double surface area which has sources of energy in the vicinity i.e. car’s battery and engine that can be used for as a space for none other than the **King of Business** i.e. **marketing**.

The companies usually have preferred advertisements on electronic hoardings which obviously require separate supply and for targets bottleneck locations are not ensured other than the print media, online platforms which are innovative and television commercials as well. It costs a huge amount to the manufacturers in terms of advertisement fee, brand ambassador charges and more reasons. Still the viewership is limited and consequently the impact of the campaign.

**Approach:** The cars in the future will undoubtedly become more electrified. The battery and charging ports and stations concepts are already in place for implementation of infrastructure which will enable smooth introduction and shift towards electric vehicle technology keeping in mind the environmental hazards of petroleum burning and issue of depleting resources. There are concepts about solar powered vehicles but designs at the moment are not feasible to run on solar energy alone. But the solar energy combined with innovative display technology can be innovatively implemented for utilizing the exterior surface of private and public vehicles as a **digital advertisement space** hence overcoming the energy consumption/ over consumption by the vehicle. The technology can be developed to include its incorporation into the old vehicles as well which can improve their visibility in dark conditions, looks and moreover this will display meaningful information effectively and with considerably high levels of mobility.

The inculcation of concepts like connected cars which essentially will require the assistance from infrastructure on ground can further help to get on receiver board the advertisement data or any appropriate information to be displayed on the car’s surface. There is a huge space which becomes available once the concepts like self-driving cars are put into motion. The possibilities of utilization of the technology become endless with the incubation of cloud and other modern IT technologies to make them available for the use of common man and with a real practical application. The machine intelligence has been another concept which has propelled in the current IOT scenario. It was initially intended for application search engines but now has wide spread application across the sectors ranging from robotics to automation to NLP. The applications of the external visual display on vehicles can be infused with AI technology and the intelligent information can be sourced to the consumer based on the and more importantly while they are on the move. The information could be based on consumer or regional or situational preference based on the need of the hour. Faster computing capabilities merged with the high-speed data transfer capabilities provide all that could be basic infrastructural requisites for implementation of the such a technology which brings the crux of all these at the end users disposal.

The ability to display critical and valuable information instantly on a wide spread scale and in specific areas will no doubt help the government and authorities for better provision of services and maintenance of order in haphazard conditions or emergencies. Even for the huge equipment used in the civil/infra projects such as roadways or railways construction to prevent the accidents by making the real-time information available to the engaged stakeholders. The advertisement on vehicle’s space can be the obvious idea for the sustainable future competition among the automobile companies, although currently being practiced but not on as massive scale and without any OEMs. Hence there arises a need for designing such a renewably powered display device and setting up a SOP in this space which can appropriately be used for the betterment of mankind.

**References:**

<https://www.loc.gov/rr/scitech/mysteries/auto.html>

<https://en.wikipedia.org/wiki/History_of_the_automobile>

<https://en.wikipedia.org/wiki/Ford_Motor_Company>

<http://www.worldometers.info/cars/>

https://en.[wikipedia](https://en.wikipedia.org/wiki/Earth).org/wiki/Earth

https://en.wikipedia.org/wiki/Artificial\_intelligence