

Incentivizing right behavior to reduce accidents and increase road safety

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Each passing day, we see rise in road accidents. Though modern vehicles have latest technologies and safety measures these have not yielded in reducing accidents as none of advancements have been successful in positively influencing right driving behavior, road sense and conscious effort to reduce carbon foot print . Most of the technology advancement such as superior seating comfort, braking systems, various alarms, improvised tyres, good roads etc. A majority of the present day drivers have instilled over confidence as they take for granted that they can drive as they wish as they believe that these technology advancements will come to their rescue as a result majority of the present day drivers violate most of safety measures resulting is not only an increase in the number of accidents but accidents with high impact. Even though a large percentage of accidents are caused by driver errors such as, driving under the influence of alcohol, negligent driving, distracted driving, aggressive driving a considerable number of accidents are caused due to mechanical defects.

In discussion with friends and family members residing in India & in foreign countries, I have gathered these below points as major causes for accidents:

Driver Related	Environmental Related	Manufacturing defects
Drunk driving	Snow	Design defects
Speeding	Rain	Faulty headlights
Tailgating	Fog	Faulty tail lights
Running red lights	Ice	Faulty steering wheels
Running stop signs	Potholes	Faulty suspension
Sudden and unsafe lane changes	Deadly curves	Faulty brakes
Wrong-way driving	Animal crossings	Faulty tyres
Improper turns		Malfunctioning wipers
Drowsy driving		
Street racing		
Tyre blowouts		
Driving under the influence of alcohol & drugs		

Night driving		
Road rage		

Solutions

Road safety is a collective effort of the society at large. As conventional measures have not been quite successful, it's time we look at incentivizing good behavior & penalizing bad behavior at every stage right from the point of sale of a new vehicle, purchase of fuel, Insurance, purchase of accessories and a number of other purchases by the owner & driver for a vehicle undertaken during his or her lifetime

A programed radio frequency enabled small device size of a pen drive can be fitted to the OBD II port (Onboard diagnostic port) available in vehicles. This device can collect information from a number of electronic and mechanical devices in the car. E.g. Emission, fuel consumption, Braking patterns, acceleration, gear change patterns, inputs that indicate overall health of the vehicle, anti-collision detection and prevention sensor inputs. All of these can be transmitted via RF when the vehicle reaches the fuel station. This data collected from the vehicle is stored and automatically analyzed by a strong backend system powered by data analytics based on which a number of patterns in form of graphs are stored that are made readily available to the driver/owner on his/her mobile phone via a customized app. Based on these various data points and patterns, drivers & vehicle owners are assigned reward points and are charged differential rate. For example

1. A vehicle that emits less dangerous gases is charged less for fuel and all accessories. Whereas, vehicles that emits more harmful gases will be charged higher rates. This logic also applies for purchase of insurance, payment of fines, and purchase of accessories and can be linked to any financial transaction pertaining to the vehicle, driver and the owner.
2. Vehicles that is well driven or a driver/owner who has gained reward points by practicing good road sense and driving behavior will get discounts for purchase of insurance, payment of fines, and purchase of accessories etc.

To implement and make this successful by insisting the right behavior we need commitment and co-operation from the Government, regional transport authorities, manufactures, retailers, gas stations, insurance companies, vendors and most importantly the consumers.

Referred & Consulted

1. Top 25 causes of road accidents: In discussion with friends and family members residing in India, Middle east and Australia
2. Consulted industry expert to understand implementation of radio frequency device and installation.

Thank you