Future of transport essay sample

INTRODUCTION

The Google driverless car is a project by Google that involves developing technology for driverless cars. The project is currently being led by Google engineer Sebastian Thrun, director of the Stanford Artificial Intelligence Laboratory and co-inventor of Google Street View. Thrun's team at Stanford created the robotic vehicle Stanley which won the 2005 DARPA Grand Challenge and its US$2 million prize from the United States Department of Defense. The team developing the system consisted of 15 engineers working for Google, including Chris Urmson, Mike Montemerlo, and Anthony Levandowski who had worked on the DARPA Grand and Urban Challenges. The U. S. state of Nevada passed a law on June 29th, 2011 permitting the operation of driverless cars in Nevada. Google had been lobbying for driverless car laws. The Nevada law went into effect on March 1, 2012, and the Nevada Department of Motor Vehicles issued the first license for a self-

driven car in May 2012. The license was issued to a Toyota Prius modified with Google's experimental driverless technology. ABOUT IT

An autonomous car, also known as a robotic car or informally as a driverless or self-driving car, is an autonomous vehicle capable of fulfilling the human transportation capabilities of a traditional car. As an autonomous vehicle, it is capable of sensing its environment and navigating without human input. A human may choose a destination, but is not required to perform any mechanical operation of the vehicle. Autonomous vehicles sense their surroundings with such techniques as RADAR, LIDAR, GPS and computer vision. Advanced control systems interpret sensory information to identify appropriate navigation paths, as well as obstacles and relevant signage. Some autonomous vehicles can furthermore update their maps based on sensory input, allowing them to navigate through uncharted environments.

Since the late 2000s, significant advances have been made in both technology and legislation relevant to autonomous cars. Numerous major companies have developed working autonomous prototypes, including Google, Nissan, Toyota and Audi. In June 2011, the state of Nevada was the first jurisdiction in the United States to pass a law concerning the operation of autonomous cars. The Nevada law went into effect on March 1, 2012, and the Nevada Department of Motor Vehicles issued the first license for a self-driven car in May 2012. The license was issued to a Toyota Prius modified with Google's experimental driverless technology. Three U. S. states have passed laws permitting driverless cars, as of September 2012: Nevada, Florida and California. (video 5 and 6) HISTORY

An early representation of the autonomous car was Norman Bel Geddes's Futurama exhibit sponsored by General Motors at the 1939 World's Fair, which depicted electric cars powered by circuits embedded in the roadway and controlled by radio. In the 1980s, a vision-guided Mercedes-Benz robotic van, designed by Ernst Dickmanns and his team at the Bundeswehr University Munich in Munich, Germany, achieved 100 km/h (62 mph) on streets without traffic. Subsequently, the European Commission began funding the €800 million EC EUREKA Prometheus Project on autonomous vehicles (1987–1995). Autonomous vehicles have also been used in mining: Since December 2008, Rio Tinto Alcan has been testing the Komatsu Autonomous Haulage System – the worlds's first commercial autonomous mining haulage system – in the Pilbara iron ores mine, Western Australia. Rio Tinto has reported benefits in health, safety and productivity. In November 2011, Rio Tinto signed a deal to greatly expand its fleet of driverless trucks. Additional mining systems include Sandvik Automine (for underground loaders) and autonomous hauling from Caterpillar Inc. COMPETITORS

Though Google introduced this technology for the cars in future but there are many companies looking forward not only to adopt it in their products but also trying to copy it. Many major automotive manufacturers, including General Motors, Ford, Mercedes-Benz, Volkswagen, Audi, Nissan, Toyota, BMW, Volvo, and Cadillac, have begun testing driverless car systems: * BMW has been testing driverless systems since around 2005. * In 2008, General Motors stated that they will begin testing driverless cars by 2015, with a view to commercializing them by 2018. In 2011, GM created the EN-V (short for Electric Networked Vehicle), an autonomous electric urban vehicle. * In

2010, Audi sent a driverless Audi TTS to the top of Pike's Peak at close to race speeds. * In 2011, Volvo began to develop an almost-autonomous ' road train' system for highways which could be integrated in cars by 2020.

* In 2011, Alan Taub, GM's vice president of global research and development, stated that the company planned to release semi-autonomous cars by 2015, and fully autonomous cars by 2020. * Volkswagen is currently testing a " Temporary Auto Pilot" (TAP) system that will allow a car to drive itself at speeds of up to 80 miles per hour on the highway. * Ford is researching driverless systems and vehicular communication systems. Bill Ford predicts semi-autonomous driving with greater interaction between cars between 2017 and 2025 and fully autonomous vehicles beyond 2025. * In 2011, Mercedes-Benz announced its 2013 S-Class will feature an autonomous driving system. At speeds of up to 25 mph, the S-Class will drive itself through slow-moving traffic jams using a series of cameras and radar-based monitoring systems controlling the speed and distance to the vehicle in front.

* In 2012, Audi announced plans to introduce a new autonomous driving system at speeds of up to 37 mph dubbed ' Traffic Jam Assistant'. The system will likely debut sometime before 2014 on the Audi A8. * In 2012, Cadillac revealed their semi-autonomous system called " Super Cruise". The system could be ready for production vehicles by mid-decade. * In October 2012, Nissan unveiled its NSC-2015 autonomous electric prototype. * In January 2013, Toyota demonstrated a partially self-driving car with numerous sensors and communication systems. * Other programs in the

field include the 2GetThere passenger vehicles from the Netherlands and the entrants of the DARPA Grand Challenge in the USA. TYPOLOGY OF ADOPTERS

GOOGLE'S EDGE OVER OTHERS

Advantages

* Google driverless car has its own GPS, maps and cameras. * Google has the best GPS system, and till date no competitor has out done them, which even the computer giant APPLE. * All the other companies have to buy GPS systems from Google. Disadvantages

* first time mover in automobile sector.

* they need to outsource their product to apply their technology.

CONCLUSION

Although, as of 2013, fully autonomous cars are not yet available to the public, many models have features offering narrower functionality. These include adaptive cruise control (a system that monitors distances to adjacent vehicles in the same lane, adjusting the speed with the flow of traffic), available on over 30 models by various manufacturers; lane assist (a system that monitors the vehicle's position in the lane, and either warns the driver when the vehicle is leaving its lane, or, less commonly, takes corrective actions); and parking assist (a system that assists the driver in the task of parallel parking.) For those of us dreaming of self-driven smart cars, the wait is nearing an end. Google took to its company blog today to proclaim a major milestone in its quest to put autonomous cars on the road: Its smart cars have driven over 300, 000 miles without a single accident under computer control.

Currently, all Google Cars are manned by two drivers in case something goes wrong. That's led to the vehicles having an absolutely stellar safety record. In fact, the only accidents Google Cars have ever been in involved a human manning the wheel. Google's self-driving cars use cameras, radar, and range finders to detect the positioning of other vehicles. They also have access to powerful servers filled with an extraordinary amount of data regarding the road the cars are driving on. The cars still aren't quite ready for public consumption, as there are a few major obstacles yet to be overcome. Namely, Google Cars need to learn how to navigate through icy, winter terrain and unexpected construction zones. But for the time being, tests have proved promising enough for Google to allow select employees to use the self-driving cars solo for their daily commutes.

REFERENCES

1. www. historychannel. com
2. www. wikipedia/driverlesscar. com,
3. www. googlecar. com