

Autonomous Car Paradigm: Changes of Automobile Industry

Speakers:

Peter Tyroller (Robert Bosch GmbH, Chairman of Asia-Pacific)

Karl Hedrick (Dept of Mechanical Engineering UC Berkeley, Professor) Dr. Hedrick

Sung Ho Hong (Hyundai Motor Group, Senior Manager) Dr. Hong

Moderator: Kyongsu Yi (Seoul National University, Professor)

It has been 100 years since humans started using automobiles as the major means of transportation. The automobile is ever-evolving and now, there is a new and exciting vehicle on the scene: the autonomous car. IT companies such as Google and Apple are developing driverless cars and increasing the competition on who can bring the first autonomous car to mass production. Automobile and engineer experts discussed the trends and issues in the development of the autonomous car and how it would impact the automobile industry at the 16th annual World Knowledge Forum on October 21, 2015 in Seoul, South Korea.

“A fully autonomous car we’ll have to be careful about defining,” explained Karl Hedrick, Mechanical Engineering Professor at UC Berkeley. “I want to use the extreme definition, which is that there’s no human involved in it at all. No steering wheel, no brakes. You get in the car and tell it where to go, and it takes you where you want to go. That’s a fully autonomous vehicle,” said Dr. Hedrick.

Dr. Hedrick believes that autonomous cars will create a paradigm shift in the automotive industry, but said this will not happen for a long time. Evolution in nature is a slow process, and Dr. Hedrick suggested that the development of autonomous cars would be a similar case.

“It will be [an] evolution,” he said. “The car industry doesn’t have to worry.”

The other panellists agreed, and foresaw future alliances with other industries to further develop the autonomous car.

One such alliance is between the automotive and communications industries.

“Automotive and Information & Communications Technology (ICT) industries can create synergy, advancing an era of auto driving,” said Sung Ho Hong, Senior Manager of Hyundai Motor Group. Dr. Hong offered examples of how these two industries have worked together to create IntelliDrive in the USA and Car2Car in Europe, which uses internet connectivity to ensure safety and comfort for the car passengers.

The experts also suggested that autonomous cars can make roads safer.

“Ninety percent of accidents [occur] because of human error,” explained Peter Tyroller, Chairman of the Asia-Pacific region of Robert Bosch GmbH. As the over-65 age group continues to grow, Mr. Tyroller suggested that autonomous cars could give independence and security to the aging population.

Even if autonomous cars have the potential to drastically reduce car accidents, the panelists discussed the timeframe in which we will begin to trust this new technology.

“When will you feel comfortable sending this autonomous car to pick up your daughter at school with no human there at all?” asked Dr. Hedrick. “We send off the vehicle, it goes through the city, it goes through the suburbs, picks up your daughter, and then brings her back home. Is that going to happen in two to five years? I don’t think so.”

With increased connectivity to data networks, cyber security in autonomous cars would be another issue. Mr. Tyroller noted that people have hacked the braking systems of cars in America, but insisted that advances in this new technology will bring about better security systems.

“If there is a will there’s a way,” he said. “We will find a solution to protect ourselves.”

Linda Mim, Reporter