Autonomous Vehicles Land, Water, Air 2017-2037

Description: This unique commercially oriented report has detailed market and technical analysis with many new infograms, conference slides, roadmaps and forecasts. It is based on global research by PhD level multi-lingual analysts in 2016 with frequent updates. The Executive Summary and Conclusions is insightful, detailed yet easily assimilated. An introduction gives an overview of the technologies and a chapter analyses important applications followed by a chapter on general Level 5 autonomy technology then one specifically on software and processor technology for them. A chapter covers LIDAR and associated technologies and a final chapter scopes autonomous energy independent vehicles.

Autonomous vehicles need no pilot, or even one in reserve, for at least some of the time. Many are unmanned mobile robots. Their time has come as they prowl everywhere from the ocean depths to the upper atmosphere and outer space. They are creating billion dollar businesses such as aircraft and airships aloft for five to ten years on sunshine alone carrying out surveillance or beaming the internet to the 4.5 billion people who lack it. Yes, independence of energy and electrification are closely related to this. Many land, water and airborne autonomous vehicles are already energy independent too, making the autonomy task easier. Most autonomous vehicles will be electric so the subject is also closely related to the electric vehicle scene.

This report looks at the whole subject in a critical manner revealing how the electric vehicle business at over $0.7 trillion in 2017 will include many new autonomous forms creating one billion dollar businesses for both the vehicles and their components. On the other hand, it shows how part of this story is the arrival of peak internal combustion engine, peak lead acid battery and peak car within 15 years causing mayhem in the industries involved.

We note that suppliers plan to sell a lot of autonomous cars to private individuals yet 70% of us will live in cities soon where cars, autonomous or not, will be banned or severely dissuaded from entering. We question whether the necessary price increases can stick for private cars but note a host of applications where premium pricing will be no problem at all, such are the benefits.

The report reveals the many very different reasons for adoption of autonomous vehicles in commercial, industrial, military, marine, aerospace and other applications and the very different degree of difficulty in achieving what is needed. Impediments are inspected, from insurance, legal, privacy and multiple road use issues to cost reducing hardware and software and making it more capable. Will the biomimetic approach of minimal sensors and superb sensor fusion software and data management prevail or are we headed for a burgeoning amount of hardware of increasing sophistication?

Which types of electric vehicle land water and air are most promising for autonomy and when? What are the lessons of combining autonomy of navigation, task and energy such as electricity from sun, wind, waves, tide, thermals? Which developers are showing most promise? Where is the money being spent? Which projects will end in tears and where are things on the hype curve today? Why are search and rescue and agriculture such promising applications?

What robot vehicles form a good escape route for car makers seeing car sales collapse? The programmer of the autonomous vehicle may make it act and react in the interests of society as a whole, for example killing the minimum number of people in an accident rather than acting in the interests of any passengers. Which is the right approach? This report addresses the issues with a balanced appraisal of it all.

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