

Analysis predicts extremely disruptive, total transition to EV / autonomous vehicles in 13 years

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(Tech Xplore)—RethinkX, an independent think tank that analyzes and forecasts disruptive technologies, has released an [astonishing report](#)

predicting a far more rapid transition to EV/autonomous vehicles than experts are currently predicting. The report is based on an analysis of the so-called technology-adoption S-curve that describes the rapid uptake of truly disruptive technologies like smartphones and the internet. Additionally, the report addresses in detail the massive economic implications of this prediction across various sectors, including energy, transportation and manufacturing.

Rethinking Transportation 2020-2030 suggests that within 10 years of regulatory approval, by 2030, 95 percent of U.S. passenger miles traveled will be served by on-demand autonomous electric vehicles (AEVs). The primary driver of this unfathomably huge change in American life is economics: The cost savings of using transport-as-a-service (TaaS) providers will be so great that consumers will abandon individually owned vehicles. The report predicts that the cost of TaaS will save the average family \$5600 annually, the equivalent of a 10 percent raise in salary. This, the report suggests, will lead to the biggest increase in consumer spending in history.

Consumers are already beginning to adapt to TaaS with the broad availability of ride-sharing services; additionally, the report says, Uber, Lyft and Didi are investing billions developing technologies and services to help consumers overcome psychological and behavioral hurdles to shared transportation such as habit, fear of strangers and affinity for driving. In 2016 alone, 550,000 passengers chose TaaS services in New York City alone.

"Our analysis indicates that 2021 is the most likely date for the disruption point," the report reads. "The TaaS disruption will be what is called a 'Big Bang Disruption': The moment that TaaS is available, it will outcompete the existing model in all markets. We find that within 10 years from this point, 95 percent of U.S. passenger miles will be traveled by TaaS."

In part, the analysis is based on findings that the greater the improvement in cost or utility, the more likely it is that people will adopt it.

The energy sector

The TaaS disruption will crater the value chain of the oil industry as demand plummets. By 2030, the report predicts that oil demand will drop to 70 million barrels per day. The resulting collapse in prices will be catastrophic for the industry, and these effects are likely to be felt as early as 2021.

The report suggests that oil demand from passenger road transport will drop by 90 percent by 2030; demand from the trucking industry will drop by 7 million barrels per day globally. This is, as the report says, an existential crisis for the industry. Current share prices and projections are based on the presumption of a system of individually owned vehicles.

The passenger vehicle value chain

The impact on passenger vehicle manufacturing will be similarly large. The value metrics for this disruptive chain will be completely different from today's measurements. The report says, "From the date at which adoption of TaaS begins (the 2021 disruption point in our model), the key unit of measurement will be miles traveled, with four variants as the key indicators: passenger miles, vehicle miles, dollar cost-per-mile and dollar revenues per mile."

Those manufacturers who adapt to these new metrics are the likeliest to survive. The report estimates that [passenger](#) miles will rise by 50 percent to 6 trillion miles by 2030, but revenues for the industry will shrink 70 percent, from \$1.5 trillion in 2015 to \$393 billion by 2030.

A side effect is the abandonment of internal combustion engine vehicles—around 97 million will be stranded by 2030, creating a gigantic surplus as demand evaporates. Car dealerships are toast—the report predicts that new [vehicle](#) annual unit sales will plummet by 70 percent. To drive that point home, it also says demand for new internal combustion vehicles as a platform will disappear by 2024. Used cars will plunge to zero, or even to negative value.

The 77-page [report](#) dives deep into the multiplex issues around transportation technologies and related economics, suggesting a horizon much closer than legislators, regulators and shareholders are currently predicting.

More information: Rethinking Transportation 2020-2030:
www.rethinkx.com/s/RethinkX-Report_050917-1.pdf

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