



## THE FIVE FORCES DRIVING DISRUPTION IN TRUCKING TODAY

*As with all industries, change is coming to trucking. To understand why, you need to look at the global forces in play.*

By Jack Roberts

**W**e live in a time of tremendous technological change and yes, disruption. The global forces driving these changes are immense and unstoppable. There is not a single person, family, business, community or country on the planet immune to these changes. And the North American trucking industry is no exception.

But for fleet managers caught up in the daily rush to keep trucks and loads moving, it can sometimes seem like the multitude of technological change rushing at them is haphazard and uncoordinated. But be assured, there are powerful global trends in play that guarantee significant technological changes through automation will come to trucking in the near future. And understanding how those forces are shaping trucks in the near-term and more distant future is critical for making decisions on how best to evaluate and deploy new technologies as they come to market.

### A Global Super Economy

Technology has been driving unbelievable change throughout the world for years. But, in the 1990s, with the advent of the Dot Com Revolution, these changes went into overdrive and affected virtually every industry imaginable.

At the same time, a move toward globalization opened up new manufacturing sectors in far-flung parts of the world.

Suddenly, companies were able to cheaply manufacture a whole new array of technologically advanced consumer products at price points that would have been deemed impossible just a few years before. It is not a stretch to say that 20 years ago, products that we use and take for granted today – such as smart phones, smart TVs, tablets and home computing devices, and more transportation-focused products such as “smart” automated transmissions and advanced vehicle safety systems – would have come with price tags approaching or exceeding \$1 million a unit.

Today, these products are priced within the means of virtually any person or business wishing to acquire them. But, in return for their low production costs, they have to be moved from far-flung corners of the globe to consumer markets in as timely and cost-efficient a manner as possible.

The global trucking industry is the spear-point of that massive global logistics effort. Regardless of where a product is manufactured, it will, at some point in its logistics journey from factory to consumer, ride on the back of at least one truck. In most cases, it may very well ride on two, three or even more trucks during the course of its journey to the consumer.

And as the desire to obtain goods from around the world in a timely manner increases, trucking is coming under increasing pressure to become more efficient, more transparent and more flexible in the way it moves those goods.

### Drivers, Drivers, Drivers

One simple way to deal with increased demand for capacity in trucking is to simply buy more trucks and trailers and hire more drivers to move those goods coming in from around the world. Having factories make more trucks and trailers is relatively easy.

But, unfortunately, there is a snag to the strategy: A perennial worldwide shortage of truck drivers.

Trucking is a tough job requiring long stretches away from home and significant personal discomfort that often pays lower wages than other industries like construction or factory work while demanding high levels of professionalism, responsibility and safety.

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With the relocation of many manufacturing jobs overseas, trucking has become the Number One job in many U.S. states. However, there simply aren't enough drivers to meet both current capacity demands and the estimates of future capacity demands that will be required as global logistics networks become more refined and more efficient at moving goods from factories to ports, airports and other distribution centers to be placed on long-haul, regional-haul or even short-haul/last mile trucks.

This driver shortage — both now and the predicted shortage in the future — is a significant enough stumbling block to an efficient global logistics network that both entrepreneurs and “legacy” vehicle and component manufacturers increasingly are turning to new technologies as a way to get around trucking's manpower shortage.



decision making. These are often referred to as “soft” costs because they are more difficult to measure or estimate in dollars.

## New Players Turn Up the Heat

All of this upheaval churning the trucking industry has, in turn, attracted the most disruptive force of all to the industry — a whole new crop of inventors, innovators and tech visionaries who see an outdated, inefficient industry, and want to use their particular area of technological innovation and expertise to transform it into a more effective, responsible means of moving goods.

Companies like Amazon, Nikola, Tesla, Hyllion and Peloton, led by tech visionaries such as Jeff Bezos, Thomas Healy, Elon Musk, and others who have their own agendas for transforming trucking. These range from an earnest desire to save the planet, reduce our dependence on fossil fuels or simply find ways to get the products sold by their company into the hands of consumers faster — to the simple realization that the adoption of new technology in trucking will be extremely lucrative for the companies that come to market with viable, reliable, new technology first.

These efforts to force their way through the door by industry outsiders, in turn, spur long-established, “legacy” OEMs and suppliers in trucking to invest in their own new technologies and bring them to market. Many of these companies have been players in the trucking industry for close to a century or more. And they have no intention of letting decades of hard work, innovation, dedication and accumulated good will be squandered by some upstart, Johnny-come-lately tech company.

And so, with their reputations as innovators — and even their very futures — on the line, global OEMs like Daimler, Volvo, PACCAR, Navistar, Scania, MAN, DAF and IVECO have no choice but to step up to the forces shaping trucking today with their own technological solutions and bring their own products to market.

On their own, each of these forces would be sufficient to drive significant new technology into trucking. All of them, acting together simultaneously, already have begun to cause seismic shifts in how truck fleets operate. And it is only a matter of time before a truly transformative technology breakthrough is achieved that will push these emerging trends into overdrive.

Technological change has always been a focus of the trucking industry, but today’s speed of innovation across multiple systems is staggering. Where will it lead?

## A New World of Regulatory Oversight

Increasingly, government regulations from around the globe are driving new technologies into trucks and trailers, and this is a trend that will only increase as time passes. It is important to note that the days of countries passing regulatory measures in isolation that only affect the vehicles and freight operating within their borders are gone forever.

Today it costs billions of dollars to bring a new truck, engine or transmission to market. Moreover, these vehicles are now being designed and built by huge, global mega-companies. And the investment dollars demanded to bring a new vehicle or powertrain to market today mean that designing a truck or component for a single country or market is simply an unimaginably expensive luxury that OEMs cannot seriously consider.

Trucks and powertrains today are designed for global markets. Which means that they either have to be designed to meet the most stringent environmental or safety regulations on the planet, or be part of a modular design that can easily scale up or down to meet those requirements depending on the regulatory environment in the country or continent in which it will be operating.

For OEMs seeking to keep research and development costs under control, it obviously makes sense to bring as many new technologies to market in as many different countries as possible. For fleets, then, regulations create a sort of one-two punch as governments either require new technologies be placed on vehicles to enhance safety or reduce emissions, and OEMs seek to introduce new technologies currently mandated in other countries in hopes of boosting adoption while simplifying their global production requirements.

## New Soft Factors in ROI Calculations

Traditional return on investment (ROI) justification of investments focused on easily measured factors like labor cost, part cost, operating expenses in fuel, etc. These are referred to as “hard” costs because of the ease in tracking the dollars tied to them.

The new world of socially and environmentally conscious company operations is looking at a much wider range of factors in the cost/benefit evaluations of investment strategy. Social justice, environmental sustainability, life cycle costs, driver quality of life, and many other hard-to-monetize factors are becoming corporate drivers of investment

**About the Author:** Jack Roberts is a transportation journalist who has been covering North American commercial vehicles for 25 years and has developed a reputation as a leading authority/futurist concentrating on new trucking technology, including autonomous vehicles, battery-electric trucks and emerging blockchain technology.



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