



## THE AGE OF AUTOMATED LOGISTICS ARISES

*Autonomous technology in commercial vehicles is coming. Will you be prepared when the first self-driving trucks arrive?*

By Mike Roeth

**P**redicting the future is a tricky business that can leave even experts in their fields looking foolish in hindsight. Many variables come into play when it comes to predicting how new technology will play out: The viability of a concept, the practicality of the idea, the ease of use, global trends, simple consumer preference. (Remember the Segway, the future of personal transportation?)

And yet, in times of great technical change — or even technological upheaval — getting a realistic sense of which technologies will impact certain industries and in what ways is vital for executives who must make decisions on when to invest in a new technology and all the ancillary changes that go along with it, such as training, maintenance and operational shifts.

A mere glance at the headlines in both trade magazines and the mainstream media confirms that trucking is already in the beginning of a great technological sea change that will likely play out over the coming 20 to 30 years and leave a vastly transformed industry in its wake when that tidal wave of change finally ebbs out.

Moreover, it's understandable that when most people think about a new "tech revolution" in trucking, they focus on autonomous trucks. And that's understandable. These wonderous machines — the stuff of science fiction a mere decade ago — have captured headlines around the world and ignited fierce debates about virtually every aspect of our society, from how freight is moved, safety and efficiency considerations all the way down to what implications their development ultimately holds for how we currently view workers and what sort of upheaval their deployment would inflict on societies and economies around the world.

If you feel uncertain about the future of autonomous trucks, that's certainly understandable. Seemingly every day there's a new story either forecasting "robot" trucks roaming alone through the nights on U.S. highways in just a few years, or another expert suggesting that the very concept of autonomous big rigs is pure fantasy that will either never come to pass, or will only work in extremely controlled, limited work environments.

But NACFE believes autonomous trucks are merely the highest-profile, headline-grabbing, newsworthy component of a much larger, vastly deeper change already permeating its way through global transportation systems — the advent of the Age of Automated Logistics.

In this vision of the future, autonomous trucks are simply one cog in a vast, automated, transparent, real-time system of moving goods efficiently, cheaply and quickly on a global scale in an environmentally friendly and sustainable fashion. In this vision of a new transportation/logistics future, virtually every aspect of a current heavy-, medium- and light-duty fleet business is likely to be subjected to massive transformational technologies.

Nothing in this rapidly evolving future is off the table — from the number of employees at a fleet and the jobs they do, to the fuel and power systems that move trucks, to the way freight is processed, tracked, monitored and delivered in real-time, to maintenance practices and our current ideas of vehicle ownership. All of these things we currently take for granted could be completely transformed in just a few years' time.

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We are not in the business of predicting the future. We know full well that "the future" is a journey of continuous improvement not a final destination. However, it is our mission to gaze into the crystal ball, decipher the tea leaves and attempt to identify which technologies will likely evolve into viable tools that can help fleets move goods more efficiently, while using



their technological adoption plans, and focus on particular technology paths that appear most beneficial to their operations.

Again, the only thing any expert can tell you about the future is that change is coming. And in trucking, over the next 20 to 30 years, every single indication is that the potential for technological upheaval through automation is tremendous.

But at NACFE, we believe that the best fleets will view these coming changes as an opportunity. And it is our pledge to be with you on this journey that is just now beginning, to map out those changes and do as much as we can to help ease both the adoption of new technologies, their transition into every day use and their ultimate transformation of trucking and logistics for the good of all mankind.

Autonomous trucks are coming. The only questions are when will they begin arriving as production vehicles, how deeply integrated the new technology will be, and at what Autonomy Level (and subsequent capabilities) will they have. NACFE believes the time to prepare for the advent of the Autonomous Age in trucking is now and is working diligently to provide fleets with the critical information and advance knowledge that will be mandatory to successfully and profitably deploy these astounding new commercial vehicles when they do arrive in the marketplace.

fewer carbon-based fuels, emitting fewer harmful pollutants into the atmosphere, easing urban congestion while, most importantly, making money in the process and sustaining both a strategically important business and providing good jobs to working- and middle-class Americans.

NACFE is already doing this with existing technologies through its series of Confidence Reports and Run on Less fuel economy demonstrations. We are trying to scale existing technologies so fleets can operate as efficiently as possible while using less fuel. We are also working on bringing clarity to some emerging technologies like battery electric vehicles and other alternative fueled vehicles through our Guidance Reports.

In these various efforts, we attempt to answer some very basic questions on technology to help fleet executives begin to plan for the changes that are coming and eventually implement promising new vehicle and operational systems into their businesses:

- What is the technology?
- What promise does it hold?
- What is a likely timeline for its adoption in the industry?
- What will it cost to both acquire and operate this new technology?
- Will it provide cost savings for fleets?
- Will it improve freight efficiency?
- Are there barriers to entry that may delay or even derail adoption?
- What are possible unintended consequences?

Using this information, fleet executives can begin to prioritize

**About the Author:** Mike Roeth is executive director of the North American Council for Freight Efficiency and truck operations leader at Rocky Mountain Institute. Mike has worked in the commercial vehicle industry for more than 35 years. His specialty is brokering green truck collaborative technologies into the real world at scale.



Mike was awarded the prestigious 2020 L. Ray Buckendale Lecturer and manuscript author. He has a Bachelor of Science in Engineering from Ohio State University and a Master's in Organizational Leadership from the Indiana Institute of Technology. Roeth served on the second National Academy of Sciences, Engineering, Medicine Committee on Reducing Fuel Consumption and Greenhouse Gas Emissions of Medium- and Heavy-Duty Vehicles, is a Department of Energy Merit Reviewer and served as Chairman of the Board for the Truck Manufacturers Association. He understands the customers, operations and intricacies of the commercial vehicle industry having held various positions in product development, engineering, reliability and quality, sales, materials and plant management with Navistar and Behr/Cummins.



**The North American Council for Freight Efficiency (NACFE) works to drive the development and adoption of efficiency enhancing, environmentally beneficial, and cost-effective technologies, services, and operational practices in the movement of goods across North America. NACFE provides independent, unbiased research, including**

**Confidence Reports on available technologies and Guidance Reports on emerging ones, which highlight the benefits and consequences of each, and deliver decision-making tools for fleets, manufacturers, and others. NACFE partners with Rocky Mountain Institute (RMI) on a variety of projects including the Run on Less fuel efficiency demonstration series, electric trucks, emissions reductions, and low-carbon supply chains. [www.nacfe.org](http://www.nacfe.org)**