Capgemini

COMMERCIAL VEHICLES

SHARING THE LOAD

The importance of partnerships in securing the future of commercial vehicles

"For commercial vehicles, the next destination must be the cultivation of connected solutions to connected, global challenges."

Alexandre Audoin, Group Industry Leader for Automotive, Capgemini

COMPETING PRIORITIES

The rest of the automotive industry has long regarded the excellence of the commercial vehicle (CV) sector – in terms of engineering quality, efficiency, and innovation – with envy. As CVs contend with vastly longer distances, harder environments, and more demanding customers, the pressure to meet those challenges has necessitated engineering excellence and remarkable efficiency.

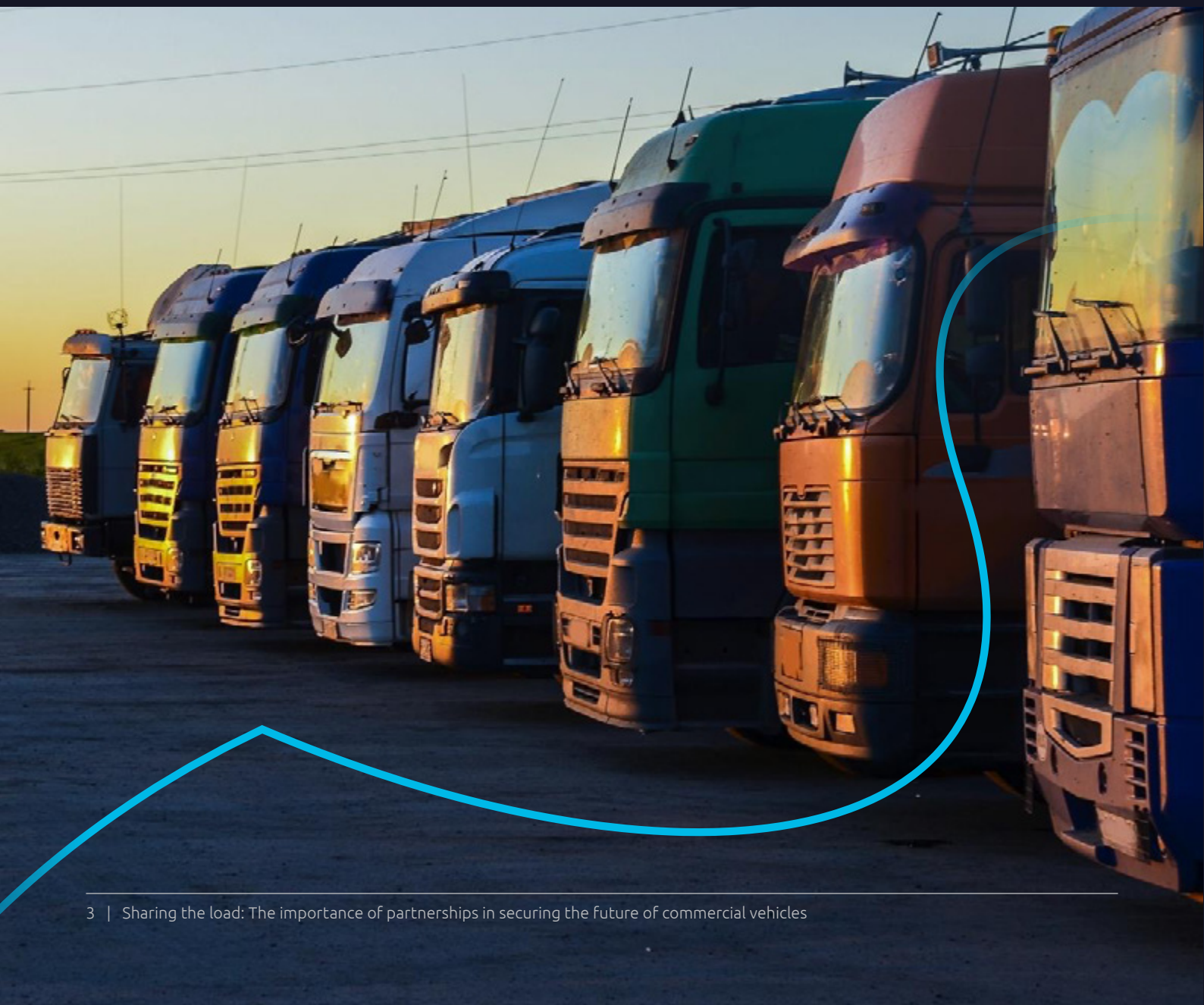
CV customers have enjoyed the downward force on total ownership costs and costs per mile for a long time, as original equipment manufacturers (OEMs) invest in new ways to optimize production, reliability, efficiency, and safety. Consequently, CVs have been the test bed for automotive innovation, delivering more involved, bespoke technologies and supply mechanisms to navigate a jungle of changeable customer priorities.

IT IS HARD TO DELIVER DIFFERENTIATION IN AN OPTIMIZED WORLD

But complexity breeds complexity. As the industry invests more heavily into the creation of unique vehicles, targeting generalized and niche use cases, it becomes increasingly vulnerable to change. Just as customers demand more tailored solutions – requiring new supplier relationships, testing, and development – OEMs must find ways to streamline production to meet the stringent climate commitments they have been set – or have set themselves.

Alongside the environmental considerations which OEMs are already working hard to address, lies the broader imperative to modernize service offerings to ensure sustainable revenue and growth. The advent and expansion of autonomous CVs and Transport-as-a-Service (TaaS) mean that reliable growth in unit sales is no guarantee. Customers are increasingly looking toward a world where they can run a smaller, multipurpose fleet, operating more efficiently as a service through managed logistics and data sharing.

The emphasis instead must be on how OEMs can fit into this ecosystem, to help customers get better returns across the whole transport value chain. Journeys need to be made more efficient. Empty miles must be minimized. Infrastructure must be changed. All of which can not be done if OEMs are still constrained by traditional market pressures, like driver shortages and scheduling.



OVER 25% OF JOURNEYS IN THE EU RUN WITH PARTIAL OR EMPTY LOADS, RESULTING IN 85 BILLION KM OF EMPTY CV JOURNEYS.[1]

Take the example of a delivery vehicle. Typically it starts the journey full and ends empty once it has delivered. Its return journey will – at least partially – be empty. Beyond optimizing the route to reduce excess fuel consumption there is little incentive for the logistics operation here to ensure those empty miles are used. However, autonomous electric vehicles could massively reduce downtime. Which means more of an incentive to optimize loads. With a data-led service approach, such a vehicle could be used more efficiently, collecting a load at the same time as delivering one, to minimize empty miles. Product optimization in this way will encourage wider transformation of workloads and operations.

It is this type of thinking which OEMs must engage with today. It is not enough to treat an optimized vehicle as 'job done.' That optimization needs to be extended toward a new, service-based economy for CVs, where customers care most about the agility and efficiency of their transport operation as a whole, rather than about the specific costs of their assets.

But this type of innovation is difficult. It requires investment which typically only consumer-side automotive businesses, or those backed by large technology investors, can afford. There is no one OEM which has the scale or sales to do it alone in the way that a Tesla or an Amazon might. Broadening focus beyond drivetrain optimization or electrification and into areas like logistics management and infrastructure will mean leaning into partnerships and acquiring different types of talent.

What OEMs must do is find new ways to transform toward service provision, relying on communities and ecosystems to help drive greater efficiency and returns across the whole transport operation.

THE CHALLENGE IS EXACERBATED BY GLOBAL FORCES

Disruption of global supply chains, driven by political turmoil, raw material scarcity, and fuel costs, means a near-constant re-evaluation of strategies, revenue planning, and risk for businesses. As margins are squeezed and operational costs increase, previous working models are not enough to guarantee growth. Even bringing in the right talent – with the digital and data skillsets needed to compete on product innovation – is becoming increasingly difficult, as demand for the same skills outstrips supply across every industry.

OEMs must continue to optimize and tailor vehicles in line with customer needs, while limiting speculation or reliance on high-risk investments. Both specific product strategies and new data-led service innovations need to deliver reliable, rapid returns.

[1] Source: Zero Waste World: Eradicating Empty Transport Miles

COMPETING IN AN INDUSTRY IN FLUX

Commercial OEMs have the experience and expertise to take advantage of the opportunities which remain, even under these difficult market conditions. What is more, CVs already offer a large platform upon which to innovate and embed the technologies which are necessary for a service-based, revenue-generating model. Electrification, autonomous driving, route optimization – redesigning the transport ecosystem to address these needs collectively is the only way to create the deep customer relationships needed for long-term growth. And CVs are large enough platforms to do it, while OEMs are generally agile enough to test, learn, and scale more quickly.

So, OEMs should not shy away from the challenges they face. Instead, it is vital to work to understand the different forces and trends which the industry is subject to. Then to focus on transforming toward more future-focused operational models, without losing sight of the process excellence which has already enabled growth in the sector.

THE CONNECTED TRENDS FACING THE CV MARKET

ENVIRONMENT AND SUSTAINABILITY CONSIDERATIONS...

Including the need to reduce fuel consumption, scale up electrification efforts, and improve the use of data to inform operations

HAVE LED TO DRIVETRAIN INNOVATIONS...

Like improved fuel efficiency, testing, and process automation

WHICH MUST SOON BE SUPPLEMENTED BY AS-A-SERVICE OFFERINGS...

To ensure that digital optimization is extended beyond vehicles to the wider transport operation, reducing journey times and costs, cutting empty miles, and improving routes

REQUIRING COMPREHENSIVE DIGITALIZATION...

Through new supply chain ecosystems and the acquisition of talent to support data optimization and gather new types of insight at scale

TO MAXIMIZE THE OPPORTUNITY OFFERED BY CONNECTED VEHICLES...

With a continuously improving network of CVs, routes, and connected services

AND SUPPORT THE ACCELERATED ADOPTION OF AUTONOMOUS VEHICLES AND ADVANCED DRIVER ASSISTANCE SYSTEMS.

To secure long-term revenue through TaaS delivery models supported by connected data and digitalization.

WHERE OEMS HAVE A HEAD START:

- An already-existing culture of innovation and adaptation to change
- A legacy of sharply focused process and engineering efficiency
- Decades of experience in product optimization and modification
- A wide, diverse set of customers and customer use cases
- Highly flexible product development, design, and production practices

IDENTIFYING WHERE THE OPPORTUNITY LIES IS IMPORTANT

CV OEMs are in a strong position to capitalize on the imperative of effective, as-a-Service commercial transport provision. By recognizing that the challenges of supply chain sustainability are inextricable from the need to build more efficient transport ecosystems, OEMs can get on the front foot – initiating change rather than being subject to it.

This transformation will manifest itself differently across the market. It might be that commercial fleets are leased to logistics customers as a managed service by OEMs, changing the current dynamics from a unit-based approach to a service one. OEMs may even choose to compete with logistics businesses themselves, providing as-a-Service transportation to end customers directly. Both manufacturers and their customers will have to adapt in some way.

The complexity of CVs, and the smaller market OEMs operate in mean that digitalization and data sharing can be tested and scaled more easily. Now is the time to start building the deep customer relationships needed to secure long-term revenue from connected, data-led transport services in the future.

Of course, those relationships alone will not be enough. OEMs must also make the necessary investments – and create the right transformation strategies – to deliver. The talent and infrastructure have to be in place to connect vehicles with customer, logistical, and environmental data to expand on decades of operational and process optimization. Balancing the two – transformation with maintenance – is crucial.

DRIVING BETTER OUTCOMES AT SCALE

Truck drivers have always been a close-knit, interdependent community, both supportive and intrepid. It is that same desire for forward motion and collective care which CV manufacturers must now channel.

Put simply, previous ways of working will not sustain commercial OEMs for the long term. Transformation is necessary – but it is also desirable, as it will support a culture of parallel investment and progress, combining vehicle improvements with a broader streamlining of the global goods flow. Connecting vehicles, customers, and their environment will make journeys more efficient, reduce emissions, speed up economic exchange, and safeguard supply chains for the future.

For this transformation to work, OEMs will need to forge new partnerships that can help turn these grand aims into activity.

> **"If you want to travel fast, travel alone; if you want to travel far, travel together."**
>
> Proverb

NAVIGATING A COURSE THROUGH CHANGE

No industry is completely safe from disruption or macroeconomic and environmental change. But CVs are, and always have been, particularly susceptible to the market forces experienced over the past decade. It is not difficult to interpret why this is:

THE CORE PRODUCT

Environmental regulations do not apply the same pressure everywhere. For CVs, they demand a near-total transformation of the vehicles themselves, to transition away from fossil fuels and toward electrification. Each step forward requires a whole new tranche of considerations, as battery-powered vehicles require further investment in charging infrastructure, for example.

THE SUPPLY CHAIN

OEMs are affected by the same supply-side forces as most other businesses – by trade issues, rising material costs, and climatic problems. But OEMs also represent a key part of the supply chain in themselves. Problems with haulage, driver numbers, and delays impact global supply networks, slowing the economy and impacting customers directly. While a retailer can operate nearly at full capacity if staff numbers are slightly reduced, logistics and transport companies see a disproportionate fall in real capacity with a similar reduction.

THE MARKET

Both energy and fuel prices have a tremendous real-world impact on customers' cost of ownership. This means their ability to invest in OEMs' products is hindered, amplifying the trend toward holistic efficiency and managed logistics ahead of scaling capacity through fleet numbers alone. If a logistic customer can turn to autonomous vehicles to reduce staff expenditure, or they can improve their route efficiency to reduce their fleet, that puts OEMs' core business at risk.

BUILDING CONNECTED PARTNERSHIPS

OEMs' traditional models focus on product optimization – without a specific focus on transforming data and digital platforms to connect with supply chains. But these models do not provide the flexibility to manage the various costs and risks that innovation brings with it. OEMs typically are not of a scale that can invest endlessly in untargeted capabilities. At the same time, the long lifecycle of CVs means innovation can not happen fast, while testing is equally limited.

So, while the solutions to those macroeconomic and environmental challenges are within the reach of human ingenuity, that is not enough in itself. Traditional OEMs may be able to create the capacity to innovate their products, but getting them to actually work within broad, evolving ecosystems requires expertise and experience which is difficult to achieve in-house.

OEMs could have an entire fleet of autonomous electric vehicles, meeting every regulatory requirement in the book. But unless they can effectively map the accompanying infrastructure, from charging points to datacenters, or involve the right public and private stakeholders in the conversation, an optimized product is not enough.

As an example, if an OEM has an electric fleet that they are using to deliver as-a-Service for customers, they need to ensure they understand the power grid dynamics, to understand and forecast the costs, load-balancing, availability, and reliability of power along routes. It is an entirely new set of considerations and takes a huge amount of data to maintain and optimize. No OEM currently has the people or scale to do it alone.

Which means that a strategic partner, who can guide manufacturers through those processes and implications, is absolutely necessary to deliver that ultimate goal of TaaS.

THE SLOW DRIVE TOWARD PROGRESS

Moving to TaaS and autonomous vehicles has been on the agenda for more than a decade. Previously, technologies have not been mature or interoperable enough to deliver the holistic transformation that is required. The difficulty of transformation, combined with the conventional optimization approach of the industry as a whole, has led to a lack of real pressure to act.

This absence of urgency has had a knock-on effect on how manufacturers have approached resourcing. The talent needed in data and digital still lags behind where it will need to be for OEMs to make significant headway on transformation.

Perhaps the biggest barrier though is the difficulty of establishing a real, encompassing pathway toward the type of transformative change that will lead to real competitive advantage for OEMs. The transition toward e-transport and automation in the field feels like something that can only be done piecemeal – since there is no precedent set for a fully realized vision of success.

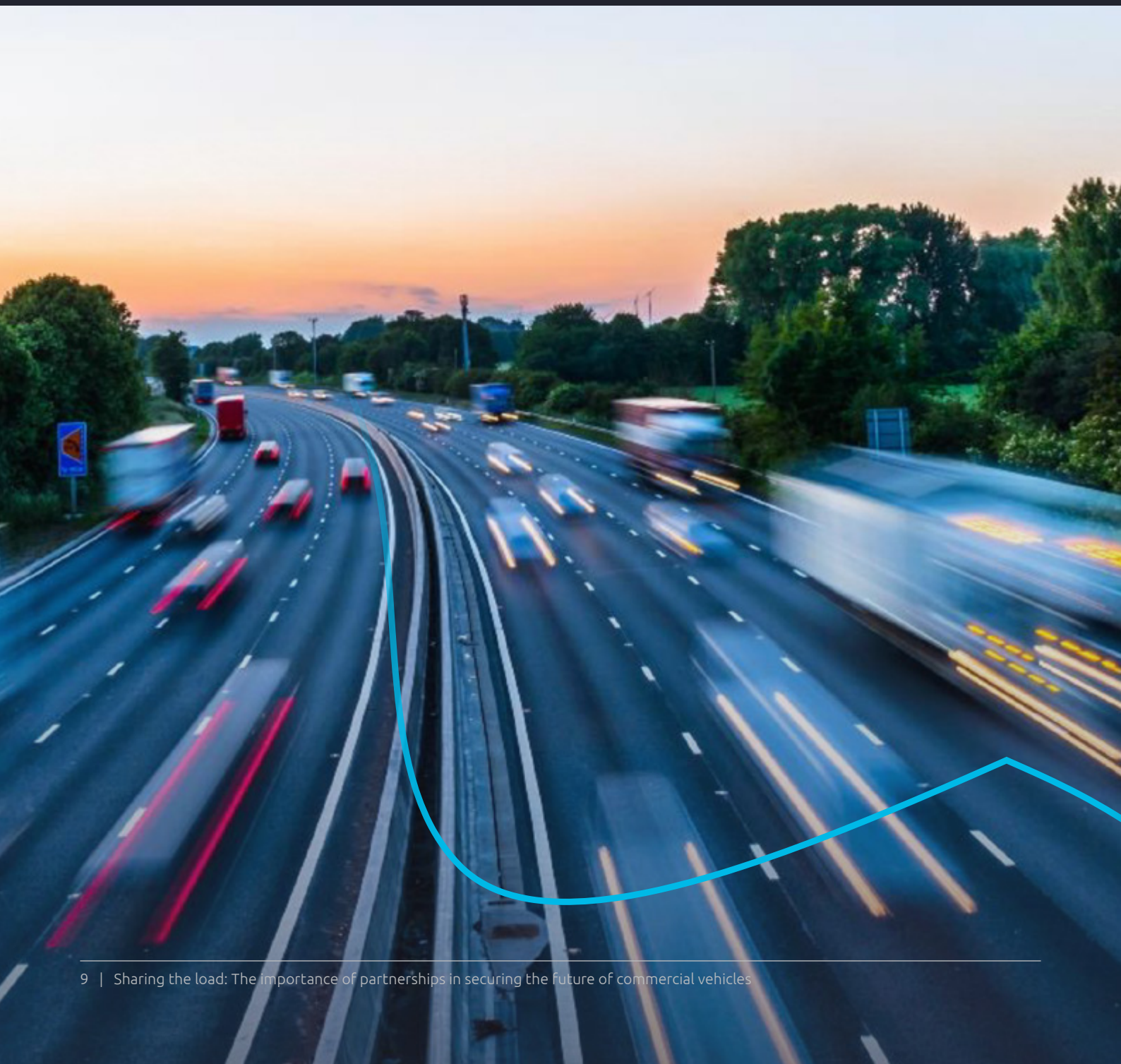
There are some niches – like in quarrying operations – where autonomous vehicles are being used, often in isolation and for simplified use cases. But this level of ambition pales next to the breadth of application that OEMs could achieve. Fully decarbonizing a supply chain, or creating fleets of self-driving CVs takes a unified effort and global strategy which few OEMs are currently ready to match.

SO WHAT IS THE ANSWER?

It is not enough just to optimize the vehicles, nor to apply limited innovation to certain use cases that do not have a broader commercial use. The commercial side of the automotive industry must find a way to scale beyond those limited applications, to transform not only vehicles, but also the data, technology, and infrastructure that support those vehicles too.

The smaller scale of OEMs in comparison to the automotive industry as a whole does offer a crucial strength here. Smaller businesses can more easily create the partnerships and relationships they need, without feeling the pressure to drive transformation entirely from within. Smaller businesses can be more agile, creating efficient ecosystems at speed, while retaining their trademark cost and product optimization expertise.

We can see that the challenges OEMs face are numerous and interwoven. But so are the solutions. Manufacturers do not have to abandon the methods which have enabled them to lead their markets, but instead can incorporate them with other capabilities, supported by partners who can help them to mold investments and strategies together.



AN INTERCONNECTED SOLUTION

The transformation required of OEMs – using data and connected technologies to help customers manage routes, costs, and emissions more efficiently – cannot be extricated from the immediate challenges in areas like electrification. Transformation must happen in parallel, with product optimization further driving down customers' cost of ownership while new, improved infrastructure and insights cut out empty miles and slash fuel expenditure.

Automation and e-transport can be the catalyst for reaching environmental and safety targets, while providing a sustainable, future-focused revenue opportunity as fleet size becomes less relevant for customers.

EXPLORING THE JUSTIFICATIONS FOR MODERNIZATION

Digitalizing the vehicles OEMs produce is not only about creating a platform for growth through as-a-Service delivery. It also changes how OEMs' businesses create that value, reducing development times and costs.

SCALING UP DATA AND DIGITAL

When OEMs invest in better talent and technology to improve access to, and usage of, data, that new capability does not only serve customers. OEMs can turn it inwards, to get better insight into how operations and processes can be made more efficient. This helps to improve margins and sustainability, and helps to join the dots between services and customers' needs.

OPTIMIZING THE DEVELOPMENT PLATFORM

The size and complexity of CVs, as well as the variation of use cases for them, mean they provide an effective canvas for innovation. They can become a platform for new, data-driven technologies more easily than consumer vehicles, gathering and sharing insights on routes, loading patterns, supporting infrastructure, and more. Which can then be used to further refine operational provision, making both vehicles and logistics more effective.

UNCOVERING NEW USE CASES

Once OEMs have the talent and infrastructure in place, they can work more quickly to adapt to market trends and establish valuable use cases for the technology at their disposal. It is now possible to explore areas like energy storage, using CVs to store or even generate renewable energy from wind or solar sources when stationary. Data and digital give the ability to test the possibilities and understand quickly when they can drive value.

OEMS MUST DIGITALIZE TO CREATE LONG-TERM VALUE

Improving data and insights infrastructure provides far more opportunities to serve customers than routing alone, informing service and product decisions, such as:

- Managing **battery life** to minimize vehicle downtime and ensure infrastructure is optimized for efficiency and potential resale value
- Understanding the condition of vehicle **energy sources** to ensure maintenance and replacement protocols are in place to maximize fleet lifetimes across different use cases
- Ensuring operator and driver **safety** with a better informed strategy for journey times and routes
- **Sourcing** more **responsibly** to build a greener, sustainable supply chain.

We can see how data-sharing infrastructure quickly embeds itself into different aspects of transport. OEMs can gather more data to understand the metrics customers want to improve, or provide the insight directly to them and advise on areas in which they can be safer, more efficient, or greener.

By acting as a trusted advisor to customers in this way, manufacturers can create new commercial partnerships and expand their footprint within key accounts. Plus, a deeper understanding of customers from the outset makes it possible to recognize their potential challenges and opportunities and adapt offerings to address them early. This creates a cycle of insight and response which ensures the relationships become less frictional over time, delivering more value, more efficiently.

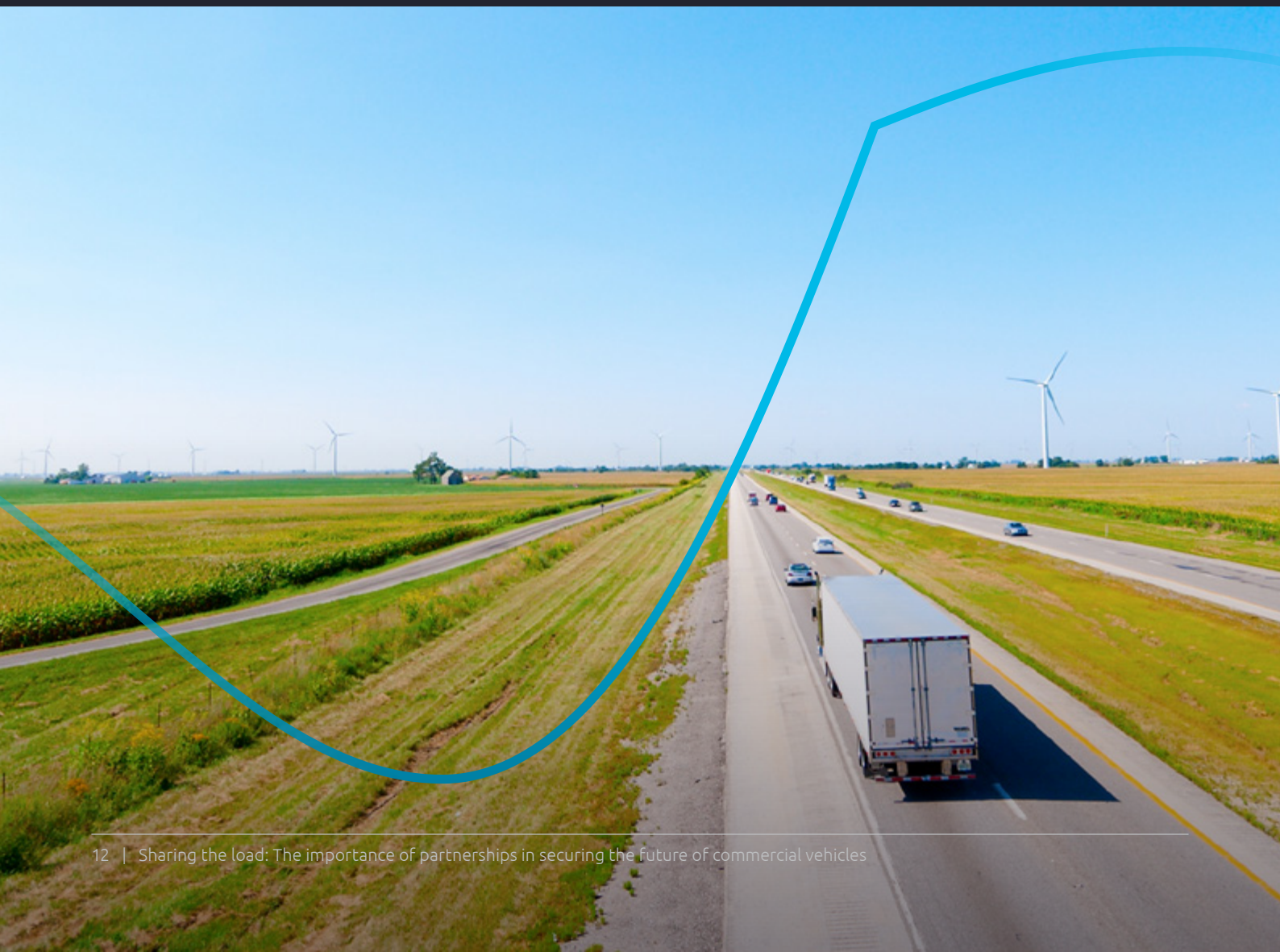
THE VALUE OF A CONNECTED ECOSYSTEM

Developing a functional, sustainable, and prosperous global economy is a massive challenge. It will take a fundamental reallocation of resources and a rewiring of conventional commercial thinking to unleash the full potential of automation and electrification. But for the businesses who can deliver on these ideals, it is also a huge opportunity. There is no reason why OEMs, with their legacy of engineering excellence and innovation, cannot lead the way.

Getting it right could shape the world economy for the better for decades to come, slashing emissions, powering global growth, and securing livelihoods. It will also help CV manufacturers to evolve; to step out of the shadow of the wider automotive industry and be the face of sustainable operations.

But OEMs need the right help to do it. Whether competing with the logistics giants, or contributing transformational services to them, OEMs must employ the expertise and experience of reliable, global partners to meet the challenge head on.

> **"The culture of robust engineering excellence in the commercial vehicle industry is second to none. But it is also a business facing up to the need to help customers really transform, not just in electrification but across the whole span of transport operations. So, we have to be more agile, more efficient – and build partnerships which can unlock that value for customers."**
>
> Ralf Blessman, Executive Vice President, Head of Automotive Business Unit, Germany



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