

When Tariffs Hit an Industry in Transition

How Automotive Companies
Leverage Technology To
Overcome Disruption



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An Industry Already in Transition

An Industry Already in Transition

“Cars are computers now. We make cars, but we’re a software company.”

“There are many forces in the industry that are coming home to roost.”

“This is a mega shift of the automotive industry.”

“A vicious circle of supply disruptions.”

These are just some of the ways leaders describe the automotive industry as it stands at the end of 2025. Tariffs have added an extra layer of complexity, raising costs and forcing rapid supply-chain reconfiguration. Even before tariffs entered the equation, automotive companies were already navigating four pivotal industry shifts reshaping their traditional business strategies, models, and competitive playbooks.

1. The move to software-defined vehicles

One of the most dramatic changes in the automotive sector is the move from mechanical engineering to software-defined vehicles. Cars are becoming “compute platforms,” changing fundamentally how they are designed, updated, and serviced. According to Corey Chandler, a KPMG managing director and National Sales Leader of Industrial Manufacturing, Aerospace, and Defense: “The industry is undergoing a fundamental change, with many leaders now viewing their companies as software-driven enterprises that also happen to manufacture vehicles.”

The concept of “the car as computer” now runs deep into industry production chains, starting with the design function. “From an engineering view, the car is changing towards the digital endpoint,” explains Hartmut Mueller, Global Vice President of Value-led Transformation at ServiceNow.

“Cars are now primarily designed and defined via software.” Software-defined vehicles are “always fresh,” with frequent in-car software upgrades radically shortening product-release cycles.

Software-defined vehicles are likely just the start of this revolution. With cars becoming compute platforms on wheels, a vista of new digital possibilities starts to open up, including AI and machine learning applications, telematics, advanced cybersecurity and connections to third-party technology ecosystems. Consider, for example, BMW Group’s Cloud Data Hub. Built on the AWS cloud, the Cloud Data Hub ingests more than 100 terabytes of anonymized data from millions of vehicles each day. With the help of AI and automation technologies, BMW’s 10,000 designers can then draw on the insights from this data to rapidly develop and deliver new features and services for customers.ⁱ

The advent of software-defined vehicles represents far more than a technological breakthrough—it also requires a total revamp of automakers’ value chains, from R&D to after-sales services. It implies a transformation of organizational culture and workforce skills.



If automakers don’t change, they know they will be left behind.

Corey Chandler

KPMG Managing Director and National Sales Leader of
Industrial Manufacturing, Aerospace and Defense

2. Business model transformation

Faced with thin profit margins, escalating input and capital costs, and fierce price competition, automakers are rethinking their business models. One major pivot already underway is from build-to-order to build-to-stock approaches, according to Mueller. Traditional build-to-order methods, focused on personalization of models selected in showrooms, delivered consumer variety but at the expense of extremely complex supply-chains and higher costs. Build-to-stock approaches, which allow customers to choose cars from a range of the most common types, help to drastically streamline supply chains and costs.

In tandem with these distribution changes, automotive companies are moving from dealer networks to direct-to-consumer sales models. “Seven clicks to buy, three clicks to finance,” Mueller explains, describing the streamlined purchasing experience automakers seek to create for customers. These changes aim to improve margins, reduce complexity, and—critically—reclaim customer data that has historically resided with dealerships.

The changes wrought by digital technologies go well beyond distribution. Connected vehicles likely prefigure a future tilt to subscription, pay-as-you-go and other non-ownership pricing models, all underpinned by cloud and connected-car systems. Many automotive providers already offer software-based features—extra connectivity, navigation support, entertainment—on a subscription basis, services which are only made possible by advanced digital software, telemetry, and cloud. Connected-car services are not simply about new revenue streams. More fundamentally, they bring a wealth of data and analytical insights that ultimately help automakers move closer to the end customer.

3. Intensified global competition

Traditional automakers, long accustomed to incremental innovation and steady market-share battles, now find themselves facing an aggressive cohort of new entrants: technology giants, nimble startups, and international contenders.

The changing face of competition can be seen in the growing dominance of Chinese producers in the electrical vehicles (EV) space. China’s share of global electric car sales has surged from around half in 2021 to just under two thirds in 2024, representing more than 11 million cars. By contrast, electric car sales were just 1.6 million in the US in 2024, with growth slowing markedly.ⁱⁱ In 2024, China also accounted for 70% of EV production and the largest share, 40%, of global exports.

Allen Hackman, Vice President of Global Marketing Go to Market for ServiceNow, notes that the auto industry was “already in chaos” before tariffs hit, with companies struggling to keep pace with Chinese competitors that can bring new features and models to market in a year, compared to the 36-60 months required by traditional Western automakers. “The bottom fell out,” Hackman observes about the timing of increased tariff pressure coinciding with these existing challenges.



4. Cooling EV demand

The surge in Chinese competition also coincides with signs of a cooling off in US consumer demand for EVs, long seen as the great hope for a financially and environmentally sustainable automotive industry. The push toward electrification has triggered massive investment in battery electric vehicles (BEVs) and hybrid platforms, but expectations have outpaced actual market demand. This mismatch has created what Len Prokopets, a KPMG managing director and supply chain expert, calls “stranded costs” for suppliers forced to invest in tooling and production based on overly optimistic forecasts.

While demand remains reasonably robust for hybrids, growth in demand for BEVs is in danger of stallingⁱⁱⁱ, reflecting their price premium over petrol vehicles, limited charging infrastructure, and general policy uncertainty. High battery prices and the fall in gasoline pump prices over the last year have further tipped the purchasing balance away from BEVs. Amid the slowdown, Mercedes-Benz paused its exports of BEVs to the US and cut prices, although it expects demand to recover somewhat over the longer run.^{iv}

Industry leaders offer varying prognoses for the longer-term outlook for BEVs in the US. Ford CEO Jim Varley has publicly stated: “It’s going to be a vibrant industry, but it’s going to be smaller, way smaller than we thought.”^v Michael Pricer, Global Lead Partner, Automotive at KPMG, reinforces this cautious note: “The initial industry forecasts for EV adoption have proven to be overly optimistic, leading to a reassessment of profitability timelines and market scale for battery electric vehicles in the near term.” While views vary to some extent, it remains clear that a weakening BEV market can only intensify market pressures in the short run.

5. The need for a workforce and organizational overhaul

Labor challenges continue to beset the industry. Traditional automakers are navigating complex workforce dynamics, including established labor agreements and long-standing engineering cultures, which require strategic management to facilitate the adoption of new, agile technologies. On top of that, the US industry must cope with an aging workforce and widening skills shortages. Ford’s Farley recently noted that his company is struggling to fill 5,000 highly-paid skilled mechanic roles, a situation he attributes in part to declining interest by younger Americans in trade schools.^{vi}

At the same time, automotive’s pivot to digital and software has created acute needs for workforce transformation. “It’s going to be a culture shift for these organizations,” says Chandler. Upskilling, re-training, and culture change are essential as deep engineering traditions meet agile digital approaches. Leaders are actively investing in education and cross-functional collaboration, scaffolding partnerships with talent providers, technology consultancies, and digital platforms to fill resource gaps.



The initial industry forecasts for EV adoption have proven to be overly optimistic, leading to a reassessment of profitability timelines and market scale for battery electric vehicles in the near term.

Michael Pricer

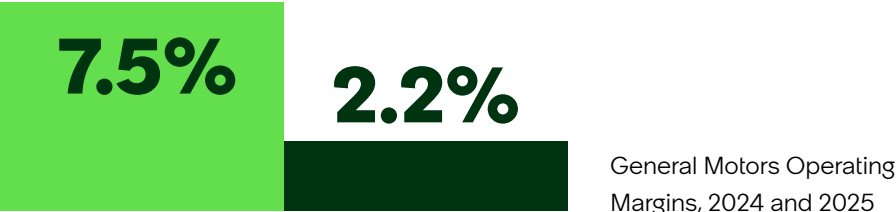
Global Lead Partner, Automotive, KPMG

The bottom line

As these shifts play out, US automotive companies must contend with everyday challenges, from fluctuating energy costs and supply shortages to geopolitical volatility and ebbing domestic demand. These pressures are taking a financial toll on US automotive makers. Operating margins have fallen and are now wafer-thin for many of the largest automotive companies. GM, for example, saw its third-quarter operating margin slashed from 7.5% in 2024 to 2.2% this year.^{vii}

Compounding these industry disruptions is a lack of organizational agility. Complex matrix organizations, sprawling supply chains and distributor networks, and a dizzying maze of communications channels often gum up automakers’ decision-making, slowing responsiveness. Dean Ocampo, Director of Marketing at ServiceNow, explains that the brittleness of automotive companies in the face of external shocks stems not from a failure to anticipate events but an inability to react quickly and make the necessary strategic adjustments.

“Compared with other industries, automotive has very mature risk-management processes,” says Ocampo. “The companies have done an incredible job of gaming out scenarios, creating complicated risk scoring projects, and developing playbooks. Where they have fallen down is in the response to what’s going on, getting information on all the moving parts, and putting the matrix together of who needs to be involved in decisions. It’s not the sensing an issue that’s the problem, it’s the ability to quickly marshal all the moving parts in time to respond quickly.” As we shall see later in the report, new AI-powered technologies—tariff modelling tools, agentic AI workflows, AI-powered data fabrics, smart supplier management platforms, digital twins—now present a compelling resolution in the search for greater organizational resilience.



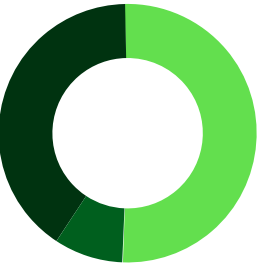
The Tariff Shock: Adding Complexity and Uncertainty

The Tariff Shock: Adding Complexity and Uncertainty

Into this environment tariffs have added a new dimension of disruption. As Chandler observes: “The end result of these tariffs on materials like steel and aluminum is essentially an immediate rise in production costs for automakers. And it is made worse because these parts and vehicles cross the border multiple times.”

The financial impact of the tariffs has been staggering. General Motors expects to take a hit of \$3.5 - \$4.5 billion from tariffs in 2025, slightly lower than forecast earlier in the year.^{viii} Ford reported a second-quarter hit of \$800 million from tariffs, due in part to higher tariffs on aluminum and steel.^{ix} Volkswagen expects a €5 billion tariff bite in 2025, partly due to US tariffs and partly due to retaliatory measures by other countries.^x

Cox Automotive estimates that automakers have theoretically accumulated more than \$25 billion in tariff obligations through the first seven months of 2025, equal to roughly \$5,200 per imported vehicle or \$2,500 per vehicle when spread across all vehicles sold.^{xi} For vehicles imported from Mexico—a critical manufacturing hub—the added cost is approximately \$8.6 billion, or roughly \$4,800 per vehicle, “entirely flipping the build-in-Mexico business model,” according to Cox Automotive analysts.^{xii}



Financial impact of tariffs, 2025

Volkswagen	Ford	General Motors
€5 billion	\$800 million	\$3.5 - \$4.5 billion



Prokopets explains that tariffs create a three-dimensional impact. First, there is the direct increase in raw material and part costs, which squeeze already thin margins. Second, supplier financial health deteriorates as they navigate tariff increases across their customer base, creating potential supply disruptions. Third, OEMs face the massive internal burden of managing thousands of supplier claims as each affected part must be analyzed, validated, and potentially renegotiated.

“Suddenly there’s a lot more work to try to capture, maintain, and address all of these transactional needs,” Prokopets notes. The impact of tariffs is most heavily felt by automotive companies reliant on global supply chains, with tariffs not only increasing costs but also affecting parts availability and after-sales services. The financial impact of headline tariffs is also magnified when semi-assembled components crisscross international borders as part of integrated production chains.

According to Chandler, the tariffs are upending just-in-time supply chains that the automotive industry has relied on for the past five decades.^{xiii} He notes that several major automotive companies are now pivoting away from just-in-time processes to just-in-case approaches to safeguard against unexpected shifts in supply and demand. While this move increases resiliency, it forces manufacturers to carry much more stock, incurring huge capital expenditure in storage and inventory costs.

These are just the immediate impacts of tariffs. Looking further ahead, automotive companies face difficult decisions about whether to change suppliers, localize production, or pursue “friend-shoring” strategies—all of which introduce new risks and require time-intensive supplier qualification processes. “Switching suppliers will drive additional complexity and cost because it just takes a long time to source and qualify and switch,” says Prokopets.

But for many industry leaders, the most troubling repercussion of the tariffs is simply uncertainty. “It’s so volatile” Hackman explains, adding that this volatility makes long-term investment decisions nearly impossible. “Do I make a move? Is this tariff going to stay at a hundred percent or is it going to go back to ten,” he asks. Hackman notes that building new production facilities requires three to five years, but companies are hesitant to commit billions to new plant when tariff policies could change so quickly and unpredictably.



Switching suppliers will drive additional complexity and cost because it just takes a long time to source and qualify and switch.

Len Prokopets

Managing Director and Supply Chain Expert, KPMG

The innovation imperative: more important than ever

Faced with compressed margins and rising costs, the instinctive response might be to rein in innovation spending. However, industry experts unanimously agree this would be catastrophic. “If you slow down the innovation, you will be out of business sooner or later,” says Mueller. The reason is simple according to Mueller: “Chinese competitors are advancing at unprecedented speed, and any company that falls behind technologically will find the gap impossible to close.” Hackman agrees: “They can’t slow down. Chinese automaker’s rapid time-to-market capabilities mean Western manufacturers have to find it from somewhere to fund continued innovation.”

In fact, with the move to software-defined vehicles the innovation cycle if anything has to speed up. Pricer describes it thus: “The clock speed has to change in the legacy automotive companies—the way they develop software needs to be up to 10 times faster than what they’re used to. And, compared to an organic company like Tesla, that’s infinitely harder to do for traditional automakers.”

Technology-driven innovation is not just a necessity, it’s a massive opportunity to revitalize demand and rewire production methods to define and create the automotive industry of the future. Beyond the software-defined vehicles already noted above, the automotive industry of the future could encompass AI-powered autonomous vehicles, artificial reality (AR) heads-up displays, digital driver assistants and immersive gaming and streaming technologies turning the car into an entertainment center. New markets and industry segments are also in prospect—from autonomous trucks and urban electric pods to micro-vans and robotaxis. So too are new business models such as energy-as-a-service for fleet vehicles and telemetry-based data marketplaces.

Digital technologies—especially forms such as generative AI and agentic AI—underpin much of this vision. Ocampo puts it succinctly: “There is a once-in-a-generation opportunity for automakers to transform the industry through AI and other technologies. It’s the organizations that double down on the right R&D that can not only weather the storm but gain competitive advantage by it.”

The consensus is clear: companies must simultaneously absorb tariff costs, transform their business models, and maintain aggressive innovation roadmaps—an unprecedented challenge that requires extraordinary operational efficiency.

Fighting Disruption With Digital Technology

Fighting Disruption With Digital Technology

Tariffs have turned the global automotive industry into a moving target. They are reshaping where parts are sourced, where vehicles are built, and how value chains are structured—and they are doing that at a level of volatility that traditional planning tools cannot handle. Piecemeal solutions clearly are not up to the task. Instead, what is required is a concerted technology response in four broad spheres of action.

The first sphere focuses directly on tariffs, through the deployment of AI technologies and data analytics to better understand supplier networks, model tariff impacts and rewire supplier networks.

The second uses digital technologies and process automation to turbocharge efficiency and create extra financial headroom to absorb tariff shocks.

The third uses technology as a catalyst for greater organizational resilience and knowledge retention.

And the **fourth sphere** harnesses AI technology to reboot flagging customer demand and innovation. As we shall see, within this unfolding story of digital transformation, generative AI and agentic AI are set to take the leading roles.



SPHERE 1:

Using Technology to Monitor and Respond to Tariffs

AI-powered digital technologies are proving indispensable in increasing supplier transparency and understanding the likely impacts of tariffs and other supply shocks.

Shining a light on supplier networks

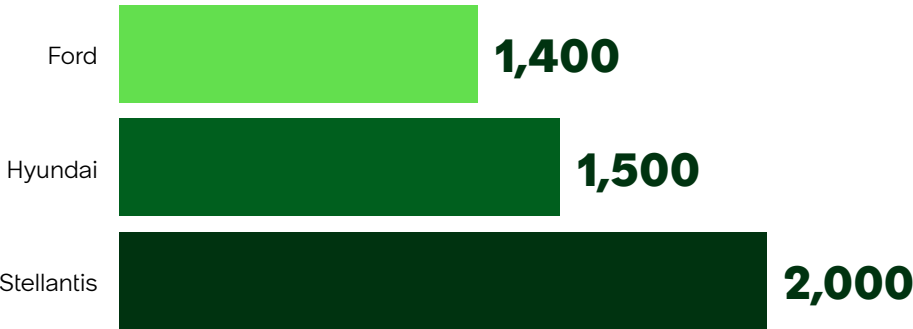
Automotive supplier networks are large, typically spanning multiple continents. Consider that Ford has around 1,400 tier-1 production suppliers^{xiv}, Hyundai around 1500^{xv}, and Stellantis around 2,000^{xvi}. Around the tier-one suppliers lies a vast penumbra of tier 2 to tier n suppliers working further up the supply chain.

For Hackman, such vast networks raise two immediate questions for automotive companies: “Who are the companies in my supplier network? And where am I single-sourced?” To answer these questions, some OEMs now harness integrated supplier management platforms that track not just tier-one suppliers but extend visibility into tier-two and tier-three providers. This transparency is essential for identifying single-source risks and geographic concentration that could leave companies vulnerable to tariff changes or regional disruptions. Hackman argues that smart companies use these platforms to identify critical components dependent on a single supplier and proactively develop alternatives.

Such AI-enabled supply chain transparency brings many benefits: reduced vulnerabilities, fewer stock-outs, reduced lead times, lower inventory and logistics costs. Crucially, it can immediately help insulate automotive companies from geopolitical fissures and policy shocks.

Kirsten Loegering, general manager and Vice President of Product Management, Finance, and Supply Chain Workflows at ServiceNow, underlines this point. Supplier management systems help enterprises remain resilient in the face of unexpected geopolitical events, supply shocks and policy shifts. They can recalculate risk scores and flag affected suppliers, contracts, and lanes. From there, predefined workflows can initiate contingency planning, launch sourcing events for alternatives, or escalate the need for renegotiations to commercial and legal teams. Instead of waiting for disruption to show up in missed shipments or margin compression, auto companies get an early-warning and response mechanism that is hard-wired into how they already manage third parties.

Tier-1 Production Suppliers



Analyzing tariff impacts

Tariffs are always a shock to companies operating across borders. But what sets these current tariffs apart from others is the unpredictable way they are taking shape. For Loegering, the only scalable way for automakers to manage this uncertainty is to use modern technology tools and platforms that make trade risk visible, analyzable, and actionable across the entire supplier and manufacturing ecosystem.

This requires tariffs to be treated as a continuously modeled business variable by fusing external trade and supplier data with internal operational systems. Supply-chain control towers and analytics engines can ingest customs rules, country-of-origin requirements, and lane-by-lane logistics information, then calculate the landed cost and margin impact of different tariff scenarios for each product, plant, and route. Instead of reacting after the fact, leaders can see where exposure is concentrated, run what-if analyses, and prioritize mitigation options long before new duties kick in.

Getting visibility into tariffs and their effects is the first step. But it is easier said than done. The “Trump tariffs” introduced in late 2024 were in many ways unprecedented in their scope, magnitude, and degree of uncertainty. Add in complex country-of-origin rules and traceability requirements and the analytical challenge starts to take on monumental proportions.

One example of a tool for analyzing tariff impacts is KPMG **“Tariff Modeler”**. Many automotive companies still use spreadsheets to track tariff changes and model their impact, which can require considerable manual effort. KPMG Tariff Modeler ingests real-time feeds from the auto maker’s customs data, with an AI engine providing an array of metrics and insights for senior executives on the impact of tariff changes. **(see Sidebar 1)**

SIDEBAR 1

No ordinary tariffs. How KPMG Tariff Modeler helps enterprises navigate the new tariff environment

When the news of impending US tariff changes began circulating in late 2024, George Zaharatos, a partner and Global Data and Technology leader at KPMG, began getting calls from worried industry executives. Many were having sleepless nights about the gathering tariff storm and how they should respond. “Clients had many questions,” says Zaharatos.

“Will it be one flat rate or a variety of tariffs?”

What’s the likelihood of retaliation?”

In response, he and his team conceived the Tariff Modeler: a scenario engine with adjustable sliders that lets users test different tariff levels and instantly see the effect on customs transactions by product, region, and supplier.”

The tool was built to handle the distinctive challenges of the Trump-era tariffs. These included multiple overlapping rates, frequent political changes, and “stacked” duties on materials, components, and finished goods that could easily push effective tariffs above 100% and cripple margins.



The final stage involves integrating tariff intelligence into supplier strategy and management. Tariffs and trade rules are often treated as a macro-overlay to supplier strategy, but Loegering's view is that they must be embedded directly into third-party risk and performance management. In modern supply chain platforms, third-party risk-assessments and monitoring can be built into supplier lifecycle workflows. Every supplier can be scored not just on quality and delivery, but also on country risk, geopolitical exposure, and vulnerability to tariff hikes—using internal data, external risk feeds, and AI to interpret signals.

All of this demands a data foundation that connects ERP, procurement, logistics, and supplier information with external intelligence in near real time. Loegering emphasizes that the real differentiator is not just aggregating data but building workflows that turn that data into insights and then into coordinated action by procurement, finance, legal, and supply-chain teams. In a world of rolling tariff changes, the workflow layer becomes a necessary complement to the intelligence layer.

Rewiring supplier networks at digital speed

Tariff volatility is, at its core, a network problem. As noted above, a small change in trade rules can suddenly make one country a high-cost outpost and another a preferred hub. How quickly and effectively automakers can respond to trade and other shocks depends crucially on whether their supplier and manufacturing networks are rigid or reconfigurable.

Generative AI can already do some of the heavy lifting: it can help teams interpret complex trade and supplier data, summarize risk positions, and draft the documents and communications required to act. It can help with a new sourcing strategy, a contract amendment, or a regulatory filing. In addition, AI agents—which can handle tasks autonomously—can guide users through the next best step in a process. They can also automate routine tasks like outreach and follow-up, and ensure that tasks are completed and documented in a compliant way.

The tool ingests customs data—tens of thousands of entries with product and tariff codes, transaction values, and origin information—and uses surveys plus AI-powered automation to trace bills of materials down to individual components. Generative and agentic AI agents continuously monitor tariff changes, pull in supplier information, compute impacts, and generate reports.

Executives access this intelligence through persona-based dashboards tailored for C-suite leaders, supply-chain managers, customs and compliance, and finance. Instead of fragmented spreadsheets and debates over whose numbers are correct, the Tariff Modeler provides a shared, near-single source of truth to guide strategic decisions. One major use case is “savings and recovery.” The tool pinpoints suppliers where tariff impacts are excessive, finds alternative sources in lower-tariff jurisdictions, and identifies missed exemptions such as those under USMCA. For one corporate user, switching a non-qualifying supplier to a compliant Mexican alternative unlocked significant savings.

The modeler proved especially valuable when the US government later “unstacked” some tariffs and offered offsets for US production. Automotive firms could rapidly mine their customs history to identify eligible refunds, recovering hundreds of millions of dollars that could be reinvested in new technologies and growth.

As trade uncertainty becomes the norm, tools such as Tariff Modeler will likely prove an indispensable complement to the broader effort to rewire supplier networks for competitive advantage.

But ultimately, Loegering envisages a much more integrated approach, based on a class of supplier lifecycle operations platforms that are designed to recast these networks at much higher speed. In her view, the solution is a workflow that integrates supplier databases, knowledge repositories, and partner data—pulling in information from both internal systems and external providers with specialized datasets on suppliers, locations, and risks. On top of this, AI services can automatically find and recommend alternative suppliers in lower-tariff or “friendly” jurisdictions, checking not only basic capabilities and certifications but also past performance, capacity, and multi-tier dependencies. In Loegering’s view, this shrinks the time it takes to move from “we have a problem” to “here is a credible list of options.”

Just as important is what happens next. Traditional supplier onboarding—collecting documents, validating data, going through risk and compliance checks—can take weeks or months. Loegering points to AI-enabled workflows and agents that can orchestrate much of this onboarding automatically: sending out questionnaires, ingesting responses, checking required documentation, and routing exceptions to the right experts. When tariffs change with little notice, this ability to build new supplier relationships in days rather than months is the difference between absorbing cost shocks and losing market share.

For automotive executives, the message is clear. Tariffs and trade uncertainty are not going away; if anything, they are becoming a permanent feature of the landscape. The companies that thrive will be those that treat this not as a series of one-off crises, but as a design constraint around which they build digitally-enabled, workflow-driven, and AI-assisted operating models. The vision set out by Loegering, Ocampo, and Zaharatos shows what that future looks like: supplier networks that can be re-wired at speed, risk that is sensed and managed continuously, and decisions that flow seamlessly from data to action across the automotive value chain.

Tariffs and trade uncertainty are not going away; if anything, they are becoming a permanent feature of the landscape.



SPHERE 2: Cutting Costs Through Technology

Efficient enterprises have greater ability to withstand costly production and supply shocks. Leading automakers increasingly look to AI-powered technology to spur greater efficiency across the breadth of their automotive operations.

Creating margin headroom through intelligent operations

Even with better visibility and smarter networks, tariffs will raise costs somewhere. Technology's second role is to create the productivity headroom that allows automakers to absorb at least part of that impact. Loegering connects this directly to the broader digital transformation of plants and logistics: IoT sensors, AI-driven analytics, and automated workflows that remove waste and downtime.

In manufacturing, computer vision and AI can automate quality checks and reduce rework, while predictive maintenance minimizes unplanned outages and keeps lines running at higher overall equipment effectiveness (OEE). Scheduling and workforce-management tools can match labor more tightly to demand, trimming overtime and idle time. Each of these savings—small in isolation—adds up to meaningful margin that can offset tariff costs while the company reconfigures its supply chain footprint.

In logistics, real-time visibility and optimization services reduce the need for costly expedited transactions and sub-optimal routing, which are common when tariffs force last-minute sourcing or routing changes. By embedding these capabilities into the same workflow platforms that manage suppliers and trade data, companies ensure that every tariff-driven decision is also an opportunity to optimize operations.

Claims management and supplier collaboration

The volume of tariff-related supplier claims has created an administrative crisis for many automakers. Traditional approaches using emails, SharePoint, and Excel spreadsheets are simply inadequate for managing thousands of claims that require cross-functional review from purchasing, supply chain, finance, legal, trading/customs, and manufacturing teams.

Companies are using technology to facilitate claims management. One example is KPMG, which has developed a claims management solution on the ServiceNow platform. This solution streamlines the intake process, orchestrates internal reviews, facilitates supplier collaboration to gather substantiating data and ensure approvals before changes are made to contracts and financial systems. KPMG Prokopets explains that the goal is to make the process more “efficient, transparent, and autonomous.”

More broadly, AI-based technologies now provide crucial support to efficient supplier management and collaboration. One way, as noted above, is through greater visibility and risk assessment of multi-tier supplier networks. Digital technology can also help in myriad other ways, including AI-powered demand forecasting, cloud-based integration of factory and supplier data, fleet optimization and inventory management.

The ultimate prize: AI-enabled supply-chain optimization.

Manufacturing excellence and connected operations

On the factory floor, AI is triggering a smart-factory revolution through AI-powered predictive analytics and enhanced knowledge management.

Many automotive companies already use IoT sensors and AI analytics to anticipate equipment failures before they occur, enabling proactive interventions that prevent costly downtime and minimize resource usage. A recent academic study estimates that use of Internet of things-enabled systems in manufacturing can cut energy consumption by 18% and slash factory downtime by 22%, while also improving overall resource utilization.^{xvii}

Machine-learning models applied to production data can iron out design and production bottlenecks that contribute to costly delays and factory downtime. Consider the impact of Toyota’s AI Factory Platform. Launched in late 2024, the platform aims to democratize AI across the factory floor by making easy-to-use AI models available to workers for a variety of tasks. The platform has saved up to 10,000 hours of manual work annually across Toyota’s manufacturing network.^{xviii}

AI and digital technologies also enable tight integration of workflows across interconnected sites. Volkswagen, for example, has partnered with Amazon Web Services (AWS) to develop a Digital Production Platform connecting 43 sites across Europe, North America and South America.^{xix} The platform creates a web of data flows linking orders, manufacturing and logistics, enabling more flexible and responsive production, unified standards, remote quality assurance, and predictive maintenance and energy conservation.



Cost reduction through business process automation

With tariffs driving costs up, automotive companies are aggressively pursuing automation to take costs out elsewhere in their organizations. “Back-office functions like HR, IT, procurement, and finance are prime targets for digitization and automation,” observes KPMG Pricer. AI-powered technologies such as intelligent document processing (IDP) can efficiently automate previously paper-laden processes in areas such as customs documentation, improving audit trails and compliance with trade rules in the process. Companies are also shifting accounts payable centers to lower-cost locations and running them on automated platforms that dramatically reduce processing costs.

Agentic AI—highly autonomous AI agents that can analyze information, take decisions and carry out complex workflows—is emerging as a particularly powerful tool for handling high-volume, repetitive tasks. AI agents can now manage supplier inquiries, process PO adjustments, handle warranty claims, and even draft knowledge base articles—work that previously ate up significant time. In late 2024 BMW Group introduced an agentic-powered platform for its purchasing and supplier network. Dubbed Alconic, the system features ten agents that can handle task such as quality assessment and processing support.^{xx}



Back-office functions like HR, IT, procurement, and finance are prime targets for digitization and automation.

Michael Pricer

Global Lead Partner, Automotive, KPMG



SPHERE 3: Digitally Enabled Agility and Resilience

A prominent theme running through all of our discussions with industry leaders is the importance of organizational agility. Hard to define precisely, it may best be described as the ability to “turn on a dime” in response to shocks and disruptions. It typically blends elements of intelligence, risk awareness and human expertise and skill.

Turning insight into action with AI

As noted earlier, intelligence is one thing, being able to act on it is another. In a world of trade disruption, speed is of the essence. Here Ocampo sees agentic AI as a game-changer, with the power to unblock the labyrinthine decision-making structures that stifle organizational agility. The singular features of agentic AI are its ability to quickly understand context, make decisions, and then trigger complex sequences of workflows or actions in response to that context.

Says Ocampo:

“AI agents can do analysis on previous types of events, identify the typical response, and come back with a recommendation. It can put proposals in front of stakeholders. It can figure out a mitigation plan, and then dynamically create those workflows. It can make assignments for the different stakeholders and then run these in a parallel way, which is where a lot of responses have failed in the past.”

Further ahead, the ability of AI agents to talk with other AI agents will transform workflow efficiency and enterprise agility. Consider the example of contract negotiations in response to a supply-chain

disruption. Today, Ocampo explains, this would likely involve hundreds of hours of manual contract reviews, information gathering and negotiation. In an agent-to-agent world, the automaker’s AI contract agents can instantaneously connect with supplier agents, review contracts, negotiate on the fly, and trigger purchase and procure-to-pay workflows, all while updating financial models and inventory systems.

Risk management and compliance

The tariff environment has dramatically increased regulatory complexity, with companies needing to navigate different rules across dozens of markets. The shift toward software-defined vehicles compounds this challenge, as software updates now require regulatory recertification in many jurisdictions—a process that happens far more frequently than traditional vehicle changes.

Both Volkswagen and General Motors have engaged ServiceNow to help manage their homologation processes. AI assists by monitoring regulatory changes across all markets, identifying which vehicle models and software versions are affected, and automating the recertification submission process. BMW has also worked with ServiceNow to automate the tracking of regulatory changes and vehicle recertification requirements across dozens of global markets, significantly reducing compliance risks and administrative burdens.

Third-party risk management has also become more critical as companies diversify suppliers in response to tariffs. New suppliers introduce potential cybersecurity vulnerabilities, quality risks, and compliance challenges. As noted earlier, technology platforms provide visibility into supplier networks, tracking not just tier-one providers but extending into tier-two and tier-three suppliers to ensure compliance with export controls, labor standards, and environmental regulations.

Countering expertise loss

Human expertise is often the first line of defense in periods of disruption. Yet just as the automotive industry faces its biggest transition in decades, many automotive companies face a looming skills cliff and a dramatic loss of institutional knowledge as experienced workers retire. “Bob who’s been there for 36 years knows exactly how this line should run and he can hear something off and he goes and fixes it,” Hackman describes. But companies can no longer depend on such tribal knowledge.

AI-powered systems are now digitizing this expertise, providing operators with diagnostic guidance and prescriptive recommendations when issues arise. Toyota, for example, uses an agentic AI system called “Obeya”, Japanese for “Big Room”, that integrates data from thousands of engineering design reports prepared by veteran engineers. Obeya’s nine AI agents offer technical advice and solutions from different vantage points—for example, around vibration, fuel consumption or regulatory standards—with the agents communicating with each other to provide a recommended resolution.^{xxi}

In other cases, AI is helping to fill gaps in expertise and move technicians faster up the learning curve. A ServiceNow pilot with Mercedes-Benz demonstrated how AI can quickly identify equipment problems, recommend solutions, and guide technicians through repairs that previously required extensive experience or lengthy troubleshooting.



SPHERE 4: Driving Innovation Across the Value Chain

For the automotive industry, innovation is now an overriding imperative. Not only does innovation cushion the immediate impact of price shocks for the customer, it also opens up new market segments and business models.

Customer experience and after-sales service

Much innovation revolves around the customer experience, with the transition to software-defined vehicles transforming service delivery. Many issues that once required dealership visits can now be resolved through over-the-air software updates. “You might have a problem with your car, you now don’t necessarily need to take it to a dealer anymore,” Hackman explains, noting that problems can be diagnosed remotely and fixed automatically without customer inconvenience.

Predictive analytics also enable proactive customer communication. Rather than waiting for a check-engine light to alarm drivers, AI systems can identify developing issues, communicate appropriate urgency levels, and automatically schedule service appointments. Hackman envisions a car that talks to customers: “Hey, you have the check-engine light on. The reason it’s coming on is X. Don’t worry, you’ve got plenty of time, but I would get it to the dealer within the next week or so. Would you like me to make an appointment for you?”

Outside the car itself, AI is revolutionizing call center operations and customer support. “You can offload first-level support. You can have agents writing knowledge bases with completely different quality,” Mueller notes. The result is better resolution times, improved SLAs, and significantly reduced operating costs.

Overall, improved feedback loops are helping companies identify and address quality issues faster. Previously a manufacturer might not receive feedback on new vehicle issues for six to nine months, by which time thousands of affected vehicles might be in the field. AI-enabled systems now provide real-time insights from service data, significantly reducing warranty costs and recall risks.

SIDEBAR 2

How AI agents could finally crack the AI data conundrum

A frequent question in digital transformation discussions is how much enterprise data modernization is needed to fully benefit from AI and related technologies.

Automotive companies are still encumbered with multiple legacy databases and platforms containing huge volumes of often unstructured and siloed data. According to KPMG Chandler, “Most of these organizations aren’t great with putting their data in a consumable order. They need to get better at treating their data as a strategic asset.” He highlights the role of IoT technologies, AI control towers and digital twins in making effective use of real-time production data.

More generally, companies can also look to centralize their organizational data sources via data lakes and data warehouses. However, ServiceNow’s Mueller notes the technical difficulties in consolidating data from multiple disparate sources and advocates for greater use of AI-powered data fabrics.

He explains: “With data lakes, you have to move your data into the data lake before you can analyze the data and get insights from it. But, with an AI-powered data fabric, you leave the data where it is and apply the AI to it. So you can now move the compute to the data and not the other way around, which makes it easier to get insights from data in situ.”



Turbocharging innovation cycles

With Chinese competitors bringing vehicles to market in 12 months compared to 36-60 months for traditional automakers, reducing development cycles has become existential. Yet speed-to-market has been stymied by several factors, such as traditional “waterfall” -type ways of working rooted in engineering cultures and poor co-ordination across sprawling, multi-disciplinary teams of designers, engineers and other professionals.

Put simply, automotive companies in this new era need to embed more agile ways of working across cross-functional teams. Technology platforms are addressing this by eliminating administrative friction and improving coordination across engineering teams.

“Where we play is we don’t help them design necessarily faster, but all the administrative coordination between different types of engineers and suppliers, everything has to come together,” Hackman explains. ServiceNow serves as a “digital thread” connecting design teams, suppliers, manufacturing engineers, and other stakeholders to prevent costly delays caused by miscommunication. When “somebody changes the design part, but didn’t tell the people putting the plant together,” the result can be months of lost time while production lines are reconfigured.

Simulation and digital twins – highly realistic digital models that can mimic the physical properties of infrastructure and machines – also propel innovation. Volkswagen works with French engineering giant Dassault Systèmes to create digital twins for multiple functions, from vehicle design and development to testing and manufacturing.^{xxii}

Digital twins optimize not just existing plants, but future ones too. They can accelerate facility design and production planning. General Motors is working with NVIDIA to simulate entire plants before breaking ground, allowing them to optimize production flow and identify issues virtually. This capability extends to testing new vehicle configurations and software updates, significantly reducing the physical testing required. Similarly, BMW turned to NVIDIA’s Omniverse platform to virtually plan out and optimize the layout and operations of its Debrecen plant before the first brick was laid for the facility.^{xv}

In fact, ServiceNow’s Ocampo believes that generative AI coupled with AI agents could drastically reduce “organizational brittleness for data access and data normalization.” AI agents can roam across organizational databases—CRM, HR, ERP, etc.—and analyze data on the fly.

Consequently, argues Ocampo, much of the current focus on data lakes and data standardization will likely become moot. “Five years down the road, executives may not need to do a lot of the work they are doing in their data lakes—such as data normalization and modelling. They may only need to get to a certain point and let agents do the rest. There’s an unwritten story of just how un-brittle data’s going to be in five to ten years’ time.”

Calls to Action: **Recommendations** **from our Experts**

Calls to Action: Recommendations from our Experts

Industry experts participating in our research offer clear guidance for automotive executives navigating this challenging environment:

1 Build real-time visibility and communication across supply chains

Developing real-time insight into your supply chain network is essential when operating in a time of uncertainty and disruption. “First it’s about transparency,” says Mueller. “The more transparency and data that you get, the more you can drive fact-based decisions of higher value.” Effective communication and collaboration between all partners in the supply chain is also essential, according to Mueller. “Transparency and open lines of communication can help identify potential issues early and facilitate quick responses to disruptions.”

By investing in digital platforms and analytics, firms can not only identify risks and bottlenecks early but can also communicate instantly and intelligently across all tiers of the business, which is critical for anticipating and containing disruption. Says Hackman: “Technology can help you understand your suppliers, identify what they supply, determine the frequency of deliveries, track lead times, and see plant connections—and ultimately improve communication with them.”

2 Diversify and localize sourcing to reduce tariff exposure

Operational resilience is achieved by strategically broadening your supplier base while moving sourcing and manufacturing closer to end markets. As Pricer notes, however: “It’s hard to change suppliers, but it is now more pressing to do so.” He advises an incremental path: “Start to diversify, add another supplier, and slowly build up a second source, not just rely on the one you have overseas.”

Hackman concurs that in the short term the key is identifying single-source dependencies and geographic concentrations that create vulnerability. “But in the long-term,” he adds, “the smart strategy, regardless of the tariffs, is bringing the supply chain as close to the final assembly as possible. That will reduce costs, transportation, logistics, and a heck of a lot of risk.”

3 Make data a strategic asset for your enterprise

To drive proactive, real-time decision-making, automotive companies need to unify their data flows across ERP, IoT, procurement, and logistics. Says Chandler: “Data is foundational for everything. Treat it as a strategic asset, break down silos. Once you’ve done that, you can monitor shifts and run rapid-fire scenario planning across your entire operation, enabling action rather than reaction.”

Loeering emphasizes that most automotive companies face enormous complexity with siloed, duplicated, and stale data scattered across numerous systems. She recommends using a platform-based, “data fabric” approach which allows real-time, secure access to distributed data sources, both on-premise and in the cloud, without physically moving data. In the longer-term, as noted in Sidebar 2, AI agents can also start to take on the heavy lifting of data discovery and analysis.

4 Move from AI experimentation to AI scaling

Like most industries, the automotive sector already uses some elements of “traditional AI”, such as machine learning, computer vision and robotics.

Pricer sees leveraging agentic AI as the next critical step for automakers. “We are seeing leading OEMs apply agentic AI to their operational data sets to proactively identify the root causes of complex issues, such as warranty claims, leading to significant improvements in quality and cost reduction,” he says. While such use cases are valuable, Pricer believes that the winners will be those companies that move beyond “AI in pockets” to platform-powered transformation. “But they will also need to start thinking about how to secure AI agents, because once that starts scaling, it is going to get really scary really fast.”

5 Use agentic AI to become an outcome-focused organization

Most businesses talk a good game about being business-outcome focused, but few fully achieve it in practice. Divisional boundaries, organizational inertia, sluggish decision-making all get in the way. Ocampo thinks that AI technology, especially agentic AI, could finally pave the way for true outcome-based decision making.

“When AI agents start talking to each other and creating workflows across multiple boundaries and departments, organizations will start to ask whether their current organizational structures are still relevant,” he argues. “Right now, enterprises are built around functional groups. But in the future, they will be able to build their organizations around desired outcomes, put a team around that, and let the agents figure out the domain-specific work.”

6 Foster cross-functional collaboration through an integrated IT platform

Coping with tariffs and other supply chain shocks requires a cohesive cross-functional response. According to Loeering, that is best achieved by installing an integrated, cloud-based IT platform that unites diverse stakeholders in real time. “In the procurement space, we want to democratize stakeholder engagement across all departments, whether it be legal, finance, or risk. People from every relevant department should be able to contribute before initiating sourcing. Technology finally allows that.”

Chandler concurs and notes that integrated cloud platforms will take collaboration to the next level. “It will enable automakers to collaborate not just within the same building but across the globe.” They can also strengthen local responsiveness, adds Chandler. “Global automakers are increasingly decentralizing their decision-making processes, empowering regional hubs to respond more quickly to local market dynamics and supply chain challenges.”

7 Leverage scenario analysis, digital twins and other tools to cope with uncertainty

To thrive in today's volatile automotive environment, companies must embrace cutting-edge scenario analysis, digital twins, and other AI-enabled tools to anticipate and outmaneuver future disruptions. In Mueller's view, "Simulation will become a core corporate competence going forward. You will have a digital twin of your organization that will enable you to simulate everything."

These advanced analytical tools will allow management teams to model disruptions before they strike and decide on contingencies with confidence. To extract the greatest value from these tools, Prokopets argues that they should be expansive in scope, providing holistic analyses spanning manufacturing, supply chain, purchasing, trade, and finance. With these tools, "OEMs will be able to produce multiple scenarios, so that they can decide which one is the right path forward."

8 Enable proactive claims and tariff impact analysis

As noted above, tariffs on automotive parts are already increasing existing supplier claims activities, according to Prokopets. Suppliers are actively trying to pass on increased costs from automotive tariffs to OEMs through claims and price adjustment requests, which can lead to contentious supplier negotiations.

In such a volatile environment, automakers need to move beyond email and spreadsheets to systematic platforms for managing supplier claims and negotiations, says Prokopets. "Auto companies need to create a technology capability that allows them to make this process efficient, create visibility as early as possible, and enable the interaction to solve questions and problems. Such a system will enable the people in the organization to do the higher-level activities—namely, making business decisions rather than just dealing with the day-to-day transactions."

The automotive industry stands at a crossroads, with the response to tariffs accelerating strategic transformations that were already underway. Companies that successfully harness AI and advanced technologies to optimize operations, reduce costs, and accelerate innovation will emerge stronger from this disruption.

Those that fail to adapt risk being left behind by more agile competitors—particularly from China—that are setting new standards for speed, efficiency, and customer experience.

The path forward requires simultaneous execution across multiple dimensions: supply chain transparency and resilience, operational excellence, cross-workflow agility, regulatory compliance, and relentless innovation.

The message is clear: AI-driven technology is no longer a supporting function but the essential enabler that will determine which companies thrive in the transformed automotive landscape of 2026 and beyond.

Appendix

Appendix

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