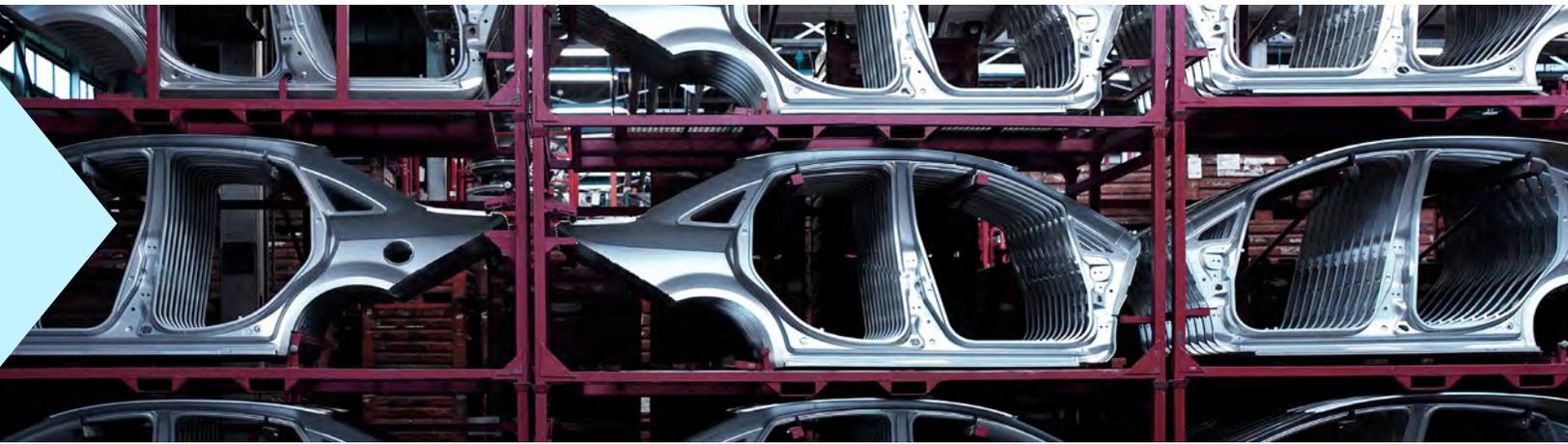




KINAXIS[®]

INDUSTRY SPOTLIGHT

5 bottlenecks
to **profitability**
in your
automotive
supply chain



How to manage demand and material volatility with supply chain orchestration

To keep business moving in today's market, auto makers need to account for possible changes at any point in their production lifecycle. Coordination of every function, from planning through last-mile execution, is at an all-time premium.

With more options for customers, overall buying trends are uncertain. Prospective buyers are looking for more customization, yet they are impatient with wait times. Inflation and other market dynamics have the industry in a tentative state of recovery. Demand for electric vehicles (EVs) is still in place, but the inevitability and urgency of this forward-looking shift has been slowed by delayed regulations and consumer hesitation.

Meanwhile, disruptions everywhere—from raw materials to carrier setbacks—continue to derail orders, jeopardize just-in-time (JIT) component deliveries, and threaten brand reputation. Amidst all this complexity, any decision you make can have major, and potentially costly, consequences.

Managing uncertainty and staying profitable requires a tightly orchestrated supply chain. Proper orchestration will position you to strategically prepare for and respond to any scenario and understand its impact on other essential supply chain functions. Not only will orchestration allow you to stay ahead of disruption, it will also accurately forecast, minimize costs, select the best carriers and routes, and track every step of the order journey right through to the dealer lot.

Here are five industry challenges that loom large on the road ahead and call for a solution that delivers agility, resiliency, and orchestrated efficiency.

1 Fickle customer expectations

Current auto buyers seem to know exactly what they want now, compared to the height of the pandemic, when inventory was so low that consumers were willing to compromise on color and feature options. As supply and demand have stabilized, consumers want their vehicle delivered to precise specifications.

Adding features can make your offering more competitive, but it also adds exponentially more complexity to their network. This creates an especially tough balancing act for non-luxury OEMs – typically, budget and mid-range buyers simply aren't willing to wait as long as luxury buyers. As we're seeing a general shift towards holding lower inventory on dealer lots, prioritizing vehicles that have the most requested features can pay off; but vehicles with the more expensive feature packages are what can drive more profit for the OEMs. Any consumer looking for an option outside of what's available should expect a wait. Whether they'll be willing to do so, is another question.

Even if companies solve for specific feature demands, there are other challenges to accurately forecasting buying trends. For instance, fewer entry-level options are available for prospective first-time auto buyers, even as the threshold for what's considered an "affordable" vehicle has increased over the last several years.¹ According to S&P Mobility's Colin Couchman, the uncertainty associated with "wait and see" customers is one of the top challenges facing the European market for the coming quarters.²



1 Gerner, Constantine, with James Martin and Julie Choate, "Fuel for Thought: The Vehicle Affordability Crunch," S&P Global Mobility, November 29, 2023.

2 "S&P Global Mobility forecasts 88.3M auto sales in 2024," S&P Global Mobility, December 14, 2023.

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Raw material shortages

We saw how the global chip shortage of 2020 set into motion a worst-case scenario of raw material crisis—and the impact it can have across the supply chain, should a supplier no longer be able to fill orders. EVs forebode new potential for material disruption. The need for better batteries could see companies enter into long-term supply agreements or recycling initiatives to ensure a steady supply of whatever battery materials they'll need.³ Other research shows the potential for more sustainable solutions.⁴ Either way, there's instability in the supply and demand dynamic around this area of future automotive power.

Traditional manufacturing materials show volatility on the horizon too, as regulations recently introduced to protect some high-demand resources have the effect of putting pressure on those markets. For instance, the Carbon Border Adjustment Mechanism has been put in place to ensure that EU steel and aluminum producers are not undercut—but this protection could still increase costs around those metals for EU OEMs.

Along with these developments, the chip shortage even in its staggered recovery continues to illustrate a lesson to not put all your eggs in one basket.⁵ As innovation and legislation create more areas for potential material disruption, agility initiatives must diversify, too. OEMs need deep visibility of inventory in transit, as well as robust what-if scenario analysis capabilities, to test out alternate strategies for overcoming a disruption. With the greater potential for having to switch suppliers, OEMs will also require multi-modal transportation management capabilities with full visibility and executability over new modes and with new carriers. to ensure they lose no time with their supplier install base if they switch from, say, Asia to Europe.

3 Automotive Outlook 2024, Economist Intelligence Unit, 2023.

4 Trafton, Anne, "Cobalt-free batteries could power cars of the future," MIT News, January 18, 2024.

5 "Supply chain issues and autos: when will the chip shortage end?" J.P. Morgan, April 18, 2023.

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A web of supplier risk

Impacts to your supply chain aren't confined to the four walls of your operations. Dense networks of tiered suppliers also open your organization to risk. Supply chains are vast complex networks with multitudes of interdependencies. If one tiered supplier deep down the chain goes offline or halts production, the corresponding ripple effects could impact multiple vehicle programs. In traditional supply chain management practices, each functional area manages its own operations, but with limited transparency into what others are doing. If there is some visibility, it's often with significant latency, which opens an organization up to threats of disruption.

The volume of suppliers leveraged in producing a finished good magnifies this complexity. A traditional internal combustion engine (ICE) has upwards of 200 parts—and that's just in the engine alone. Meanwhile, the tiered supplier community is expansive in of itself, with most organizations running their own supply chains, each unique to some degree. So even while an EV's electric motor has significantly fewer parts, close to 20, the supplier to each of those 20 parts is just as critical.

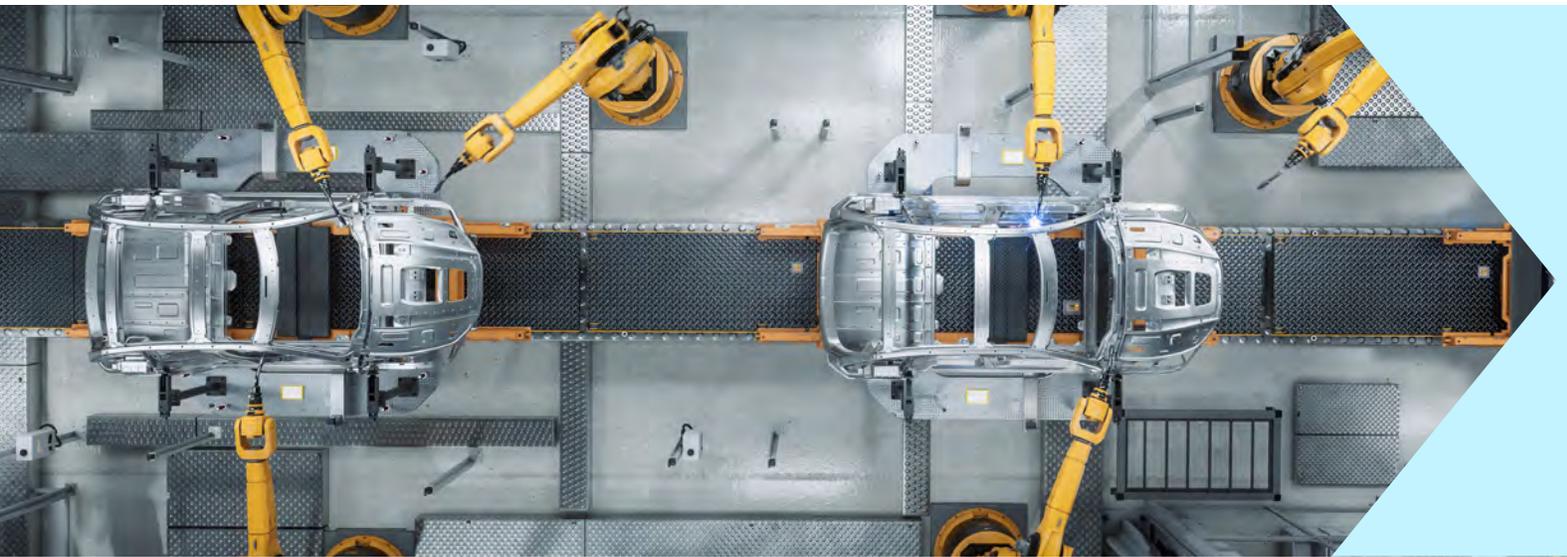
Many OEMs lack the advanced supplier collaboration functionality they need. If anything goes astray, the only way anyone will know about it soon enough to replan for minimal impact, is with real-time information and transparency across the network.



**These suppliers need to be connected to us like never before,
and we connect to them through supplier collaboration.**

MIKE HEGEDUS

Vice President of Supply Chain Management, Trinity Rail



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Siloed processes hinder efficiency

Configuring assembly lines to produce a part or component is complicated work. Working in silos, various production sites struggle to align their production views across assembly, chassis, engine, trim, and gearbox production. Compounding this lack of transparency, supply plans for each site are typically kept in separate systems—isolated from demand data. Planners often resort to spreadsheets to slot the production demand and align with rule-based production capacity statements to optimize the lines.

Only with increased transparency and a consolidated view of production planning across the enterprise can OEMs gain critical insights about how their production aligns to current demand, to decrease the risk of delays or stock-outs, as well as their costly flipside: excess inventory. To avoid losing production capacity also requires automation and logistics optimization that minimizes costs and ensures critical JIT parts get where they need to be.

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Lack of global regulatory consistency

Avoiding the costs that compliance brings is another area where navigating risks to profitability has grown more complex for OEMs. Conditions and trends vary tremendously from one region to another. In the US, there's been some pumping of the brakes on emissions legislation, with the Biden administration slowing tailpipe emissions regulations and EV requirements through 2030. This relative lack of infrastructure supporting the overall market shift to EVs creates its own instability, however.

At the same time, Clean Air for Europe (CAFE) efficiency regulations already in effect are forcing reconsideration around the production of sedans, which tend to operate at the low end of efficiency. OEMs that want to keep producing sedans may have to boost their production of hybrids or SUVs in order to meet the CAFE average standard.⁶ Those that shift to making more smaller crossover SUVs, on the other hand, face more stringent regulations with respect to those vehicles' "light truck" classification.

Compounded with protections such as the CBAM regulations on steel and aluminum mentioned earlier, forecasting buyer trends and trade pressures across international markets becomes incredibly challenging.



“What we used to do only a couple of years ago doesn’t work for us today. Our goal has been to prioritize digital investments that will maximize the business value. That’s why we’re focusing on the supply chain part.

STEVE KENT

CIO and Vice President of IT, Subaru of America

Drive supply chain profitability with Kinaxis

An efficient, responsive platform custom-built for automotive supply chain orchestration and transparency.

Traditional supply chain solutions can't contend with the unprecedented complexity and volatility of today's auto markets. Change in the industry isn't easing up—it's proliferating. It's time for your organization to pick up the pace.

Kinaxis RapidResponse® is the world's only concurrent planning platform that provides true, end-to-end concurrent planning. Synchronizing data, people, and processes across the network, it balances your entire supply chain continuously and instantly. With RapidResponse, you'll get clarity into all S&OP and supply chain planning areas at once.

Uniting everyone in your ecosystem around a single platform, data model, and interface, RapidResponse enables key operational functions across your organization to confidently make critical decisions that advance your business's interests and protect your bottom line.

4 of the
top 10 global
Fortune 500
auto makers
are Kinaxis
customers



I only have 140 people in my IT department, so I have to leverage partnerships that help propel digital transformation for us. Kinaxis is helping. We had less than 2 million cars units in operation. Now we're up to 7 million.

STEVE KENT

CIO and Vice President of IT, Subaru of America

How Kinaxis builds a more resilient automotive supply chain

Through secure cloud-based integration, Kinaxis RapidResponse connects all internal and external data sources seamlessly. Offering flexibility to easily integrate with existing ERP systems or develop custom apps and algorithms, it enables you to create a supply chain configuration to your unique needs, reducing waste and accelerating breakthroughs. Instead of allowing disruptions to halt progress, RapidResponse injects your supply chain with the power of an intuitive and adaptable planning solution.



Power true enterprise-wide visibility

RapidResponse breaks down functional silos, enabling tiered supplier orchestration and providing intelligence that's backed by real-life supply chain data via a digital twin, instilling trust in the network from multi-year strategy planning to last-mile execution and delivery. With real-time exceptions alerts and inventory views across multi-tier partners, locations, and shipment milestones, businesses never have to wonder where critical parts are, and can quickly ensure items get where needed, on time and at the lowest cost.



Nail the vehicle options mix

Seemingly infinite vehicle options combinations can introduce tremendous complexity to your network, but having those options is critical to driving sales. With vehicle options management and Feature BOM functionality, OEMs can create rules associating part requirements for a given option, simplifying the planning process and streamlining the BOMs for that program. This also helps OEMs gain insight into the most in-demand vehicle options and mix, to ensure the correct supply, decrease lead times, and drive customer value.



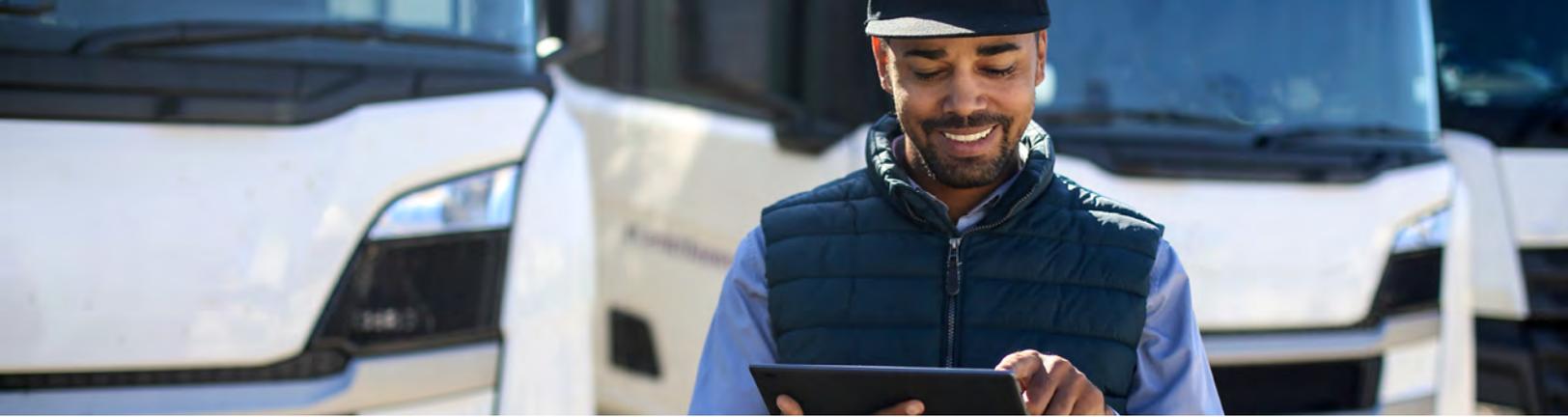
Advance sustainability planning and logistics

Don't be at the mercy of regulations and expectations for cleaner operations—plan for them. RapidResponse allows OEMs to see all nodes within the network, empower cleaner sourcing and transportation decisions, even flag suppliers that lack green practices, explore fuel options and optimize for truckload, route, and carrier. Kinaxis enables partner network logistics planning of order flows against the lowest carbon footprint, plus CO₂ emissions reduction planning that helps ensure each options mix fulfills both regulatory and customer demands.



Drive agility and collaboration

When there's a material shortage, a supplier goes offline, or a weather event interrupts operations, RapidResponse delivers agility to handle bumps in the road. With what-if scenario analysis, OEMs can test strategies to overcome disruption and keep business moving. Collaboration functionality extends across tiered suppliers and enables configuration of additional data streams. Once parts are on their way, always-on optimized re-planning ensures logistics teams are notified in real-time of any issues.



Steer towards the future with insight and integrity

Kinaxis has been helping automakers achieve supply chain success and step up to market challenges for years. Today, you can do more with your supply chain management processes than ever, from data synchronization and smart collaboration to AI-enabled “always learning” algorithms. The end-to-end orchestration solutions on the Kinaxis platform will turn your supply chain into a powertrain for business success.

With Kinaxis, you can harness the power of cross-network data to monitor trends, improve forecasts, and maximize gains. Capitalize on opportunities that a siloed competitor won't even see. Organizational change can be overwhelming, especially supply chain transformation. We get it and can work with you to capture gains surgically and iteratively.

Kinaxis is proud to work with many of the world's automotive leaders. [Find out](#) why companies like Subaru, Mazda, Volvo, and Ford rely on Kinaxis implementations to differentiate their supply chains and gain competitive edge.

To learn how Kinaxis can be implemented quickly to accelerate the strength of your automotive supply chain, [request a personalized demo](#).

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