Speed and precision
for your automotive supply chain

kinaxis®

For today's automotive businesses, disruptions lurk around every corner. Uncertainty, delays, and volatility are attributes of a fluid market that demands automakers adapt on the fly—with deep coordination of complex processes and supply chain functions.

There's still a shift toward electric vehicles (EVs), but roadblocks in the marketplace have slowed the urgency of this transition. Auto original equipment manufacturers (OEMs) have yet to find the sweet spot for which type of EV will take off, for instance, with the latest waves of EV trucks seeing delays in production, followed by buyer hesitancy. A report by Boston Consulting Group reveals that most automakers are currently losing thousands of dollars on each EV they sell, after accounting for customer tax credits.[1]

Making cars that are affordable, and affordably, remains a challenge, as varying regulations across global trade partners, inflation, and other market dynamics also affect profitability. Meanwhile, disruptions from suppliers upstream or carriers in-transit continue to derail orders, cause expensive recalls, and damage brand reputations, putting just-in-time component deliveries at risk.

Changing forecasts, reconfiguring supply lines, and optimizing new schedules leaves no room for error. Each decision carries a payload of weight. Tightly syncing every stage, from concept to customer, is crucial, as OEMs' profitability hinges upon their ability to strategically prepare for any scenario, anticipate its impact across functions, and master uncertainty for profit.

HAZARDS IMPEDING YOUR ROAD TO PROFITABILITY

We recognize that the obstacles automotive companies face, though familiar on the surface, are shifting in nature and creating heightened levels of urgency. They're also obscuring timely opportunities.

Volatile demand and buying trends

While inflation and economic pressures have brought fluctuation to buying patterns, so has innovation. With the steady advance of electric vehicle technology and a proliferation of feature options driven by digitization, customers have endless possibilities. Synchronizing with dealers to get the right models and options mixes onto lots is another matter—and one thing that customers do not have an endless supply of is patience. In addition, failure to get in sync harms margins by forcing dealers to have to offer rebates on unwanted configurations that have entered the dealer network.

Automakers are struggling to forecast customer demand and reconcile market share data with internal sales data to determine production priorities. Many use legacy equipment or systems that are too sluggish to handle major production shifts and factory floor reconfigurations that can be necessitated for new models or engines. To be able to keep pace with customers' desires and unwavering service expectations, OEMs need to be able to leverage feature-based software, precisely test supply line configurations, and inform more accurate forecasts.

Supplier constraints

A lack of transparency and coordination between suppliers is also hampering OEMs' ability to serve customers. For instance, if an automaker doesn't know that the main supplier of their headrests is having a material shortage of gray, soft-touch fabric from *their* supplier, the OEM won't be able to fulfill critical orders—and will have realized this too late to prevent damage to its customer or dealer relationships.

Moreover, assembly lines are heavily reliant on just-in-time (JIT) component delivery. Late visibility into capacity constraints or parts shortages can halt a production line. Manual tracking won't cut it. OEMs need a real time view of their Tier 1 and Tier 2 supplier capacity, systemic collaboration to evaluate scenarios in consideration of all possible constraints, and concurrent planning and execution capabilities that enable collaboration with the entire partner network, from suppliers and contract manufacturers to carriers, to ensure visibility and control over every milestone.

Poor visibility drives up costs

In traditional supply chain management practices, each functional area manages its own operations, but with limited transparency into what others are doing. Or, if there is some visibility, it's often with significant latency, which opens an organization up to threats of disruption. Any material supply shortage, delay, or other disruption that does occur creates ripple effects impacting possibly multiple vehicle programs.

Production facilities are only making money if they are producing something. Automotive OEMs must protect their margins by gaining actionable insights about what products to build, and how to plan production, given available supplies and uncommitted capacity. To maximize output without expending resources, production needs to be on the same page as engineering, so both operate from a single version of the truth, with a clear view of their entire network.

Intensified competition

A recent research study estimates that $1.6 trillion is being lost to disruption each year.[2] For OEMs, it's not just about losses from halts in production, it's about lost opportunity, as the competitive advantage modern supply chain technology potentially offers is being used to capture market share. This is forcing traditional manufacturers to innovate even faster, pumping resources into solving the EV affordability puzzle, establishing trust in self-driving technology, or exploring new ownership models like subscriptions.

Some auto leaders are already using their insights and data to create new programs, and even expand luxury products by engaging customers on their own terms, building services in partnership with dealers to progress forward together. If you're not adapting to an industry that's in overdrive, you're likely to be left in the dust.
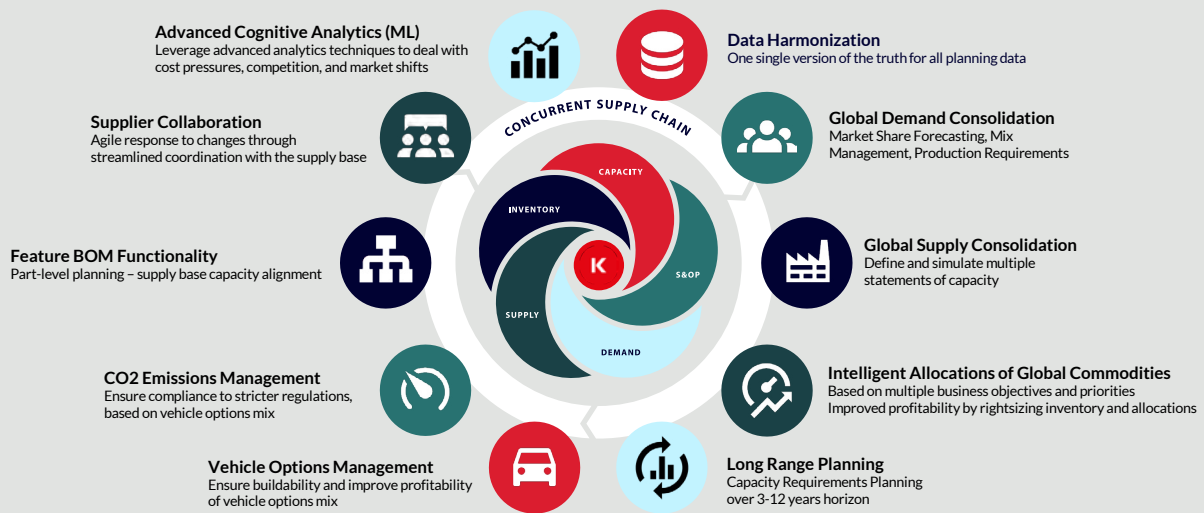
A CLOSER LOOK AT SUPPLY CHAIN ORCHESTRATION

Today's supply chain challenges demand hyper-agile, modern supply chain management techniques—the end-to-end orchestration of people, and physical, digital, and financial assets to meet customer expectations and corporate goals.

While the concept of 'orchestrating' specific parts of the supply chain isn't new, supply chain orchestration is emerging as a new sub-segment of supply chain management—bringing together the most critical activities into a new synchronized process.

Supply chain orchestration rises to the challenge of managing multiple parties, systems, and processes to drive high-performance supply chains that can fulfill on time and in full at the lowest possible cost, and to do so consistently, with resilience to changing demands and conditions. The result? Happier customers, better network synchronization, and more sustainable profits.

WHAT MAKES KINAXIS RIGHT FOR YOU?

Kinaxis offers auto-specific functionality and capabilities designed to overcome your unique challenges

Advanced Cognitive Analytics (ML)
Leverage advanced analytics techniques to deal with cost pressures, competition, and market shifts

Supplier Collaboration
Agile response to changes through streamlined coordination with the supply base

Feature BOM Functionality
Part-level planning – supply base capacity alignment

CO2 Emissions Management
Ensure compliance to stricter regulations, based on vehicle options mix

Vehicle Options Management
Ensure buildability and improve profitability of vehicle options mix

CONCURRENT SUPPLY CHAIN

CAPACITY
INVENTORY
SUPPLY
S&OP
DEMAND

Data Harmonization
One single version of the truth for all planning data

Global Demand Consolidation
Market Share Forecasting, Mix Management, Production Requirements

Global Supply Consolidation
Define and simulate multiple statements of capacity

Intelligent Allocations of Global Commodities
Based on multiple business objectives and priorities
Improved profitability by rightsizing inventory and allocations

Long Range Planning
Capacity Requirements Planning over 3-12 years horizon

Features-based BOMs

When considering the plethora of available options on a new car, the total number of possible feature combinations can quickly reach the billions. But to remain competitive, OEMs must offer a wide range of options to meet customer expectations. Supporting every combination is far too complicated to manage individually, and can lead to excessive lead times, missed commits, and stressed planners.

To manage this complexity, car manufacturers use multi-digit codes for specific configurations and options for each car model, ensuring all combinations are validated for market-specific offerings. Feature BOMs with Kinaxis provide a dynamic bill of materials to describe valid car models with option combinations, facilitating production and supplier orders based on the correct configurations. The Feature BOM offering utilizes characteristics and relationship of certain parts and combinations — some mandatory, some not allowed, and some complementary — ensuring BOM explosion in RapidResponse leads to accurate production and assembly of orders. This dramatically simplifies and speeds up the planning process, cutting down lead times to ultimately increase customer satisfaction.
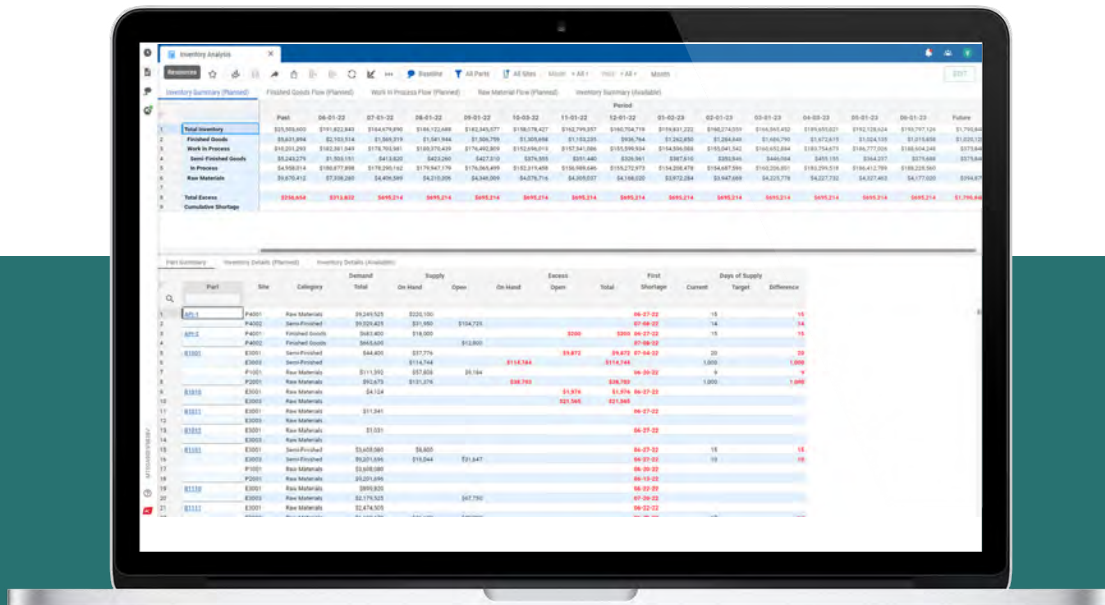
Supplier collaboration

No other industry rivals the complexity of the supplier network that the auto industry holds. The sheer volume of parts required to manufacture a finished good can reach the thousands. This complex web of suppliers often serves many vehicle programs, each facing its own supply chain complexities. Should any supplier go offline or miss a commit, that can have catastrophic ripple effects in the supply chain and bring orders to a halt.

Kinaxis delivers advanced Supplier Collaboration, so OEMs can gain visibility across all their tiered suppliers to stay ahead of disruption. This functionality helps to minimize risk by empowering your suppliers to review orders; see expected, committed, and actual delivery dates; and alert the network to disruptions. In the event of disruptions, OEMs and suppliers can efficiently and effectively collaborate and model scenarios to determine the best option to mitigate risk and keep production moving. You can even add additional data streams to prepare for the launch of a new program to ramp up production to meet timelines and commits.

Planning for sustainability

While not at the breakneck speed originally projected, consumers are steadily shifting towards more sustainable options—and expect auto companies to follow suit. Adding in shifting government regulations that differ from one global trade partner to another, and navigating the sustainability landscape can become extremely complex.

Kinaxis provides supply chain orchestration capabilities for OEMs to plan their operations in a more sustainable way. Enterprise-wide visibility of all nodes within the supply chain network empowers OEMs to identify which suppliers have the most and least green practices. With truckload optimization capabilities, OEMs can ensure they are maximizing available space for more sustainable transportation decisions. They can also explore various fuel options for cleaner sourcing decisions.

When managing logistics across the partner network, Kinaxis also enables OEMs to plan order flows against the lowest possible carbon footprint, consolidating orders, when possible, to minimize trucks on the road. To comply with emissions regulations, OEMs can plan the optimal options mix by considering factors like vehicle color and heavy components that can impact efficiency. This allows OEMs to meet customer expectations, while reducing emissions and avoiding millions in penalties.

VALIDATION FROM THE EXPERTS

The 2023 Gartner Magic Quadrant™ for Supply Chain Planning Solutions positioned Kinaxis furthest on Completeness of Vision and highest on the Ability to Execute, making Kinaxis the first and only vendor to ever be placed furthest on both axes in this Gartner® report.[3]

In the 2023 Gartner Critical Capabilities report, Kinaxis scored above average in all 15 capabilities and was ranked top in the following areas: supply planning basic functionality, multi enterprise planning, decision/plan alignment, process management, data integration, scenario management, user experience, scalability and performance/speed, and solution extensibility.

> 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 car units in operation. Now we're up to 7 million.

STEVE KENT

CIO and Vice President of IT, Subaru of America

ENDNOTES

1   Arora, Aakash with Brian Collie, Aykan Gökbulut, Rob Grosvenor, Andrew Loh, Nathan Niese, and Lauren Taylor, "Can OEMs Catch the Next Wave of EV Adopters?" Boston Consulting Group, March 20, 2024.

2   Blanchet, Max, with Stephen Meyer, Sunita Suryanarayan, Sef Tuma, and Jeff Wheless, "Resiliency in the making," Accenture, 2023.

3   Gartner, Magic Quadrant for Supply Chain Planning Solutions, A. Salley, T. Payne, P. Orup Lund – 2021, 2022, 2023
Gartner, Magic Quadrant for Supply Chain Planning System of Record – 2014, 2016, 2018
Gartner, Magic Quadrant for Sales and Operations Planning Systems of Differentiation – 2019, 2017, 2015

KINAXIS®

www.kinaxis.com