BlueYonder

Powertrain complexity under pressure: Where mix volatility disrupts the aftermarket service loop

As EV, Hybrid, and ICE vehicles coexist across the vehicle population, aftermarket networks are becoming increasingly complex. Availability has given way to affordability due to inflation, tariffs, and interest rates, putting pressure on service parts networks to deliver the right part at the right time while controlling costs and meeting customer expectations.

The Problem

Aftermarket networks lack the end-to-end visibility and coordination needed to manage growing SKU complexity, multi-tier constraints, and volatile demand—resulting in stockouts, rising costs, longer repair times, and declining customer satisfaction.

Electronics-driven SKU explosion

- × Rapid growth in electronics, sensors, and software-driven components
- × New product introductions with little to no demand history
- × Long-tail SKUs with high storage and handling requirements

Multi-tier supplier blind spots

- × Limited visibility into Tier 2 and Tier 3 readiness
- × Delays and shortages discovered too late to mitigate
- × Exposure to geopolitical, trade, and weather disruptions

Inefficient inventory placement

- × Excess stock of slow-moving parts
- × Critical EV and Hybrid components unavailable where needed
- × High working capital tied up in safety stock
- × Siloed decisions across distribution nodes

Freight cost volatility and unstable flow

- × Emergency shipments and premium freight triggered by poor availability
- × Unpredictable delivery schedules and constrained capacity
- × Rising cost-to-serve for electronics-heavy components

Service delays at the point of repair

- × “Part not available” delays extend repair times
- × Missed SLAs and deferred service appointments
- × No accurate promise dates for dealers or customers

The Solution

Aftermarket leaders need a connected, AI-enabled planning and execution layer that synchronizes EV, Hybrid, and ICE service parts—stabilizing inventory flows, detecting disruptions early, and restoring reliable, affordable service across the network.

Strategic network design and optimization

- + Treats the service parts network as a dynamic digital twin
- + Optimizes cost, working capital, service levels, and resilience simultaneously
- + Determines ideal stocking locations, safety stock, and flow paths

AI-driven demand and supply planning

- + Segments demand across EV, Hybrid, ICE, and long-tail SKUs
- + Improves forecast accuracy for new and low-volume components
- + Aligns inventory optimization, replenishment, and sourcing
- + Enables scenario planning for adoption curves, disruptions, and demand spikes

Omni-channel order management

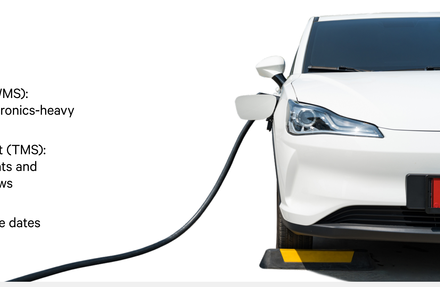
- + Prioritizes critical parts using rule-based allocation
- + Balances service commitments across dealers, repair centers, and other channels
- + Reduces costly exceptions and last-minute premium freight

Multi-enterprise collaboration and risk management

- + Provides visibility across suppliers, distributors, and multi-tier networks
- + Identifies shortages, quality risks, and delays earlier
- + Supports dual sourcing and proactive mitigation strategies
- + Strengthens continuity for batteries, electronics, and semiconductors

Connected Execution

- + Warehouse Management (WMS): Increases accuracy for electronics-heavy and long-tail SKUs
- + Transportation Management (TMS): Reduces expedited shipments and optimizes replenishment flows
- + Order Management (OMS): Ensures dependable promise dates and orchestrated fulfillment



Value Benefits

- + Higher availability of critical EV, Hybrid, and ICE service parts
- + Fewer stockouts and faster repair turnaround times
- + Reduced premium freight and emergency replenishment
- + Lower working capital tied up in inventory
- + More resilient global aftermarket networks
- + Stronger customer loyalty and improved brand service experience

See how Blue Yonder's automotive supply chain solutions can work for you.

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