CASE STUDY

Tier-1 Automotive Suppliers

Automotive Supply Chain Intelligence

OEM call-off windows gave 48 hours of planning time. AI extended the planning horizon to 6 weeks - independently of the OEM.

Tier-1 automotive component supplier · Engine and drivetrain components · 4 plants · 8 OEM customers

Innovacio Technologies · +91 90072 71601 · hello@innovaciotech.com

1. Overview

A Tier-1 supplier of precision engine and drivetrain components serving 8 OEM customers operated under a call-off model where OEM production schedules were communicated 24–48 hours in advance. For a manufacturer that needed 3–4 weeks to procure critical raw materials and 2–3 weeks of production lead time, a 48-hour call-off window was not a planning signal - it was a notification of what was already needed yesterday. Every OEM schedule change triggered a ripple through their raw material procurement, creating either emergency sourcing events or excess inventory accumulation, depending on which direction the OEM changed.

In one quarter, 6 separate OEM schedule changes created emergency procurement events totalling ₹28 lakh in spot market purchases at 2–4x standard cost. Simultaneously, their raw material inventory was 40% above optimal levels on components that had been over-procured in anticipation of OEM volumes that subsequently decreased. The team was permanently reactive - unable to plan beyond the next OEM call-off window.

2. Key Results

↑25%	↓22%	6wks	↓18%
Supplier lead compliance	Raw material emergency	Planning horizon extended	Inventory carrying cost
Continuous monitoring	Proactive buying	From 2-week call-off	Right-sized stock

Figure 1: Key outcomes - 6 months post-deployment

3. Challenges

OEM demand signals arrive 24-48 hours before production
Call-off windows are not planning windows. They are notifications of what is already needed. AI extends the horizon independently.

Raw material planning fully dependent on OEM accuracy
When OEM changes schedule — as they do — your raw material plan is instantly wrong. Decoupling requires an independent model.

Safety stock sized for OEM uncertainty — always wrong
Too much buffer: excess inventory cost. Too little: one OEM change triggers emergency. Dynamic safety stock per component solves this.

Supplier performance visible only after delays happen
Dozens of raw material vendors. Without continuous tracking, a deteriorating vendor is only visible after they cause a delay.
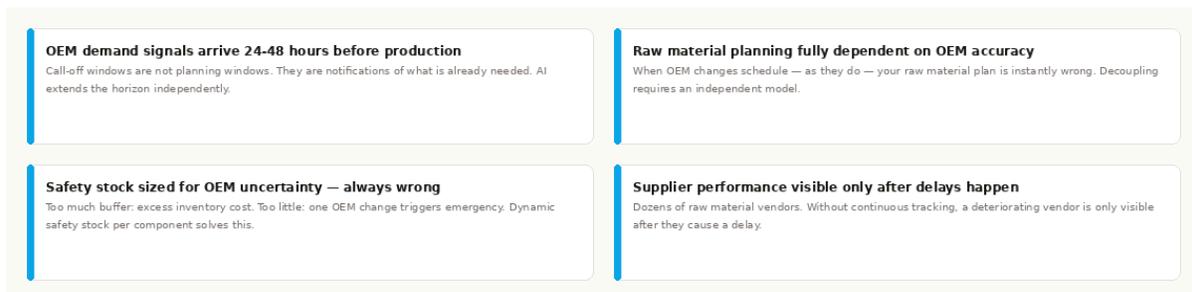
Figure 2: Four planning challenges in Tier-1 automotive supply

OEM Call-Off Windows Are Notifications, Not Planning Windows

24–48 hour call-off windows from OEMs give a Tier-1 supplier with 4–6 week procurement lead times effectively zero planning time. The call-off confirms what will be needed - but the planning for raw material procurement and production scheduling must happen weeks before the call-off arrives. An independent demand model is required.

Raw Material Planning Fully Dependent on OEM Accuracy

When an OEM changes their production schedule - which they do regularly - the Tier-1's raw material plan is instantly wrong. Without an independent demand model that can absorb OEM uncertainty and generate stable raw material procurement signals, every OEM change creates an emergency procurement event or an excess inventory write-off.

Safety Stock Sized for OEM Uncertainty - Always Wrong

Building safety stock to absorb OEM schedule volatility requires understanding how volatile each OEM is on each component. A static safety stock formula applied uniformly produces the wrong answer for every OEM relationship. Dynamic safety stock per component per OEM relationship is the only systematic solution.

Supplier Performance Visible Only After Delays

Tier-1 suppliers depend on 30–50 raw material vendors. Without continuous performance monitoring, a vendor whose on-time delivery rate is deteriorating is only visible after they have already caused a production delay. By then, the impact on the OEM is already locked in.

4. Our Solution

We connected to their ERP and integrated OEM EDI data feeds for all 8 OEM relationships. Our AI built an independent demand model for each OEM-component combination - one that could generate a 6-week forward demand signal without relying on the OEM's call-off accuracy. Dynamic safety stock recommendations were generated per component per OEM relationship, calibrated to each OEM's historical schedule variability.

Modules Deployed

OEM-Independent Demand Forecasting	Dynamic Safety Stock per Component	Raw Material Procurement Planning
Supplier Performance Monitoring	OEM Schedule Variance Tracking	AI Assistant

Implementation Timeline

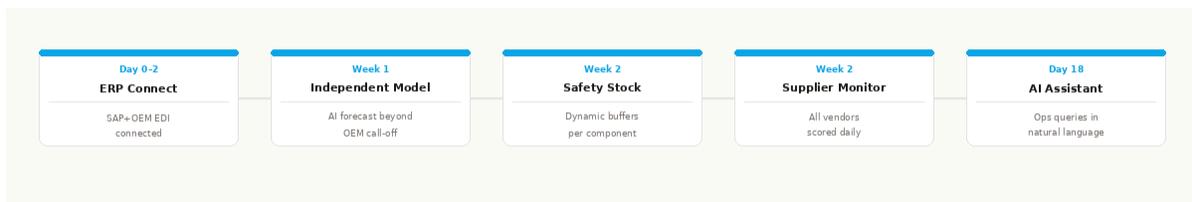| Day 0-2 ERP Connect	Week 1 Independent Model	Week 2 Safety Stock	Week 2 Supplier Monitor	Day 18 AI Assistant
SAP+OEM EDI connected	AI forecast beyond OEM call-off	Dynamic buffers per component	All vendors scored daily	Ops queries in natural language

Figure 3: Independent demand model live week 1. Dynamic safety stock week 2.

Key Capabilities

- **Independent forecasting:** Independent demand model - 6-week forward demand signal per OEM per component, not dependent on call-off accuracy
- **Adaptive safety stock:** Dynamic safety stock per OEM - buffer sized to each OEM's historical schedule volatility, not a uniform formula
- **Procurement AI:** Raw material procurement planning - AI-generated purchase recommendations 4–6 weeks ahead, matched to actual production requirements
- **OEM intelligence:** OEM schedule variance tracking - pattern recognition identifies which OEMs change schedules most and when, informing safety stock calibration
- **AI chatbot:** AI Assistant: 'What raw material risk do we have if OEM-3 cuts volumes by 15% this month?' - instant scenario answer

5. Results - Before & After

Area	Before	With Innovacio
Planning horizon	2-week OEM call-off only	6-week AI forecast independent
Raw material emergency	Regular OEM changes trigger panic	↓22% proactive buys ahead of risk
Safety stock logic	Tied entirely to OEM call-off	AI dynamic decoupled from OEM
Supplier tracking	Manual follow-up after delay	Real-time scoring proactive alerts
Inventory carrying cost	Over-stocked for OEM uncertainty	↓18% right-sized per component
On-time to OEM	Variable OEM changes propagate	Consistent buffer absorbs changes

Figure 4: Planning and procurement metrics - before and after

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> We used to describe our planning process as 'organised panic'. The OEM changes the schedule, we scramble for raw materials, we either pay spot market prices or we sit on excess inventory. The AI gave us a planning window that doesn't depend on OEM accuracy. For the first time, we are ahead of the call-off - not behind it.

- Priya Nair, Head of Supply Chain · PrecisionAuto Components

6. See It in Your Operation

We connect to your ERP and OEM EDI data and show you your current independent demand forecast and dynamic safety stock recommendation per component - in a 30-minute call.

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