PICO

Transforming an Automotive Supply Chain with Connected Technology

Executive Summary

In today's competitive manufacturing landscape, optimizing supply chain operations is crucial for reducing costs and enhancing efficiency. Our customer, a global leader in agricultural machinery, has successfully leveraged Pico's Connected Supply Chain solution to achieve significant cost reductions, inventory management improvements, minimized expedited freight, and strengthened supplier relationships. This white paper explores how our customer utilized connected technology to trace incoming raw materials from its Tier 4 suppliers through the entire engine supply chain, culminating in finished goods traceability in warehousing and distribution.

Introduction

Our customer's commitment to innovation and operational excellence is evident in its continuous pursuit of advanced technologies. The implementation of Pico's Connected Supply Chain solution marked a pivotal step in revolutionizing their supply chain management. By integrating real-time data and advanced analytics, our customer transformed its supply chain operations, driving substantial improvements across various metrics.

Challenges in the Traditional Supply Chain

Before adopting the connected supply chain solution, our customer faced several challenges:

High Inventory Levels: Excess inventory to buffer against uncertainties in supply chain operations and quality led to increased holding costs.

Expedited Freight Costs: Inconsistent supply chain visibility resulted in frequent use of expedited freight to meet production schedules.

Supplier Relationship Management: Limited real-time collaboration with suppliers hindered proactive problem-solving and continuous improvement efforts.

Machine and Process Downtime: Unanticipated equipment failures caused production delays and increased maintenance costs.

Machining Defects: Quality issues due to insufficient real-time monitoring of production processes.
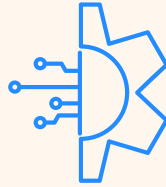
Process Transparency: Lack of comprehensive visibility into the entire supply chain hindered strategic decision-making.
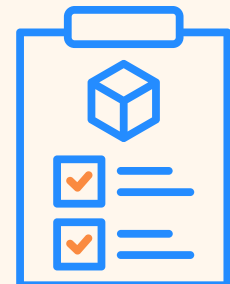
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Implementation of Pico's Supply Chain Digital Twin Solution

Our customer's implementation of Pico's Connected Supply Chain solution focused on achieving end-to-end visibility and control over its supply chain, from Tier 4 raw material suppliers to powertrain component machining and assembly, to chassis assembly, and finally to finished goods distribution. Key features of the solution included:
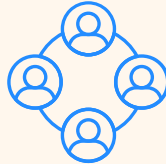
Real-Time Data Streaming:
Integration of sensors and IoT devices provided real-time data on raw material quality, shipment status, and supplier performance.

Advanced Analytics:
Predictive analytics and machine learning algorithms enabled proactive decision-making, identifying potential disruptions before they occurred.

Collaborative Platform:
A unified platform facilitated seamless communication and collaboration between our customer and its suppliers.

Comprehensive Monitoring:
Continuous tracking of equipment performance and production processes to ensure quality and efficiency.

Results and Benefits

Cost Reduction:
Lower Inventory Levels: Real-time data and predictive analytics enabled our customer to maintain optimal inventory levels, reducing excess stock and associated holding costs.

Reduced Expedited Freight: Improved visibility and proactive planning minimized the need for expedited freight, leading to significant cost savings.

Improved Inventory Management:
End-to-End Traceability: Tracing raw materials from Tier 4 suppliers through the engine supply chain ensured that all components met quality standards and were delivered on time.

Optimized Warehousing: Enhanced visibility into inventory levels and demand patterns enabled more efficient warehousing and distribution operations.

Enhanced Supplier Relationships:
Proactive Collaboration: The collaborative platform facilitated real-time communication and joint problem-solving with suppliers, improving overall supply chain performance.

Supplier Performance Monitoring: Continuous monitoring of supplier performance metrics fostered a culture of continuous improvement and accountability.

Increased Supply Chain Capacity:
Capacity Optimization: Better coordination and resource allocation improved supply chain capacity, allowing our customer to handle higher volumes with the same infrastructure.

Reduced Machine and Process Downtime:
Predictive Maintenance: Real-time monitoring and predictive analytics reduced unexpected equipment failures, minimizing downtime and maintenance costs.

Reduced Machining Defects:
Quality Control: Continuous process monitoring, and real-time feedback ensured higher quality standards, reducing defects and rework.

Increased Process Transparency:
Visibility and Control: Comprehensive data integration provided complete transparency across the supply chain, enhancing decision-making and strategic planning.

Operational Improvements:
Improved Demand Forecasting: By analyzing historical data and market trends, the solution enhanced demand forecasting accuracy, aligning production schedules with market demand and reducing the risk of overproduction or stockouts.

Agility and Responsiveness: The connected supply chain enabled our customer to quickly adapt to changes in demand, supply disruptions, or market conditions, ensuring business continuity and customer satisfaction.

Enhanced Compliance: Real-time data and traceability ensured compliance with regulatory requirements and industry standards, mitigating risks associated with non-compliance.

Environmental Sustainability: Optimized supply chain processes reduced waste, energy consumption, and carbon footprint, supporting 's sustainability goals.

Employee Productivity: Automated data collection and reporting freed up employees from manual tasks, allowing them to focus on value-added activities and innovation.

Case Study:
Engine Supply
Chain Optimization

To illustrate the impact of Pico's Connected Supply Chain solution, we examine a specific case within our customer's engine supply chain:

Scenario: Incoming raw materials from Tier 4 suppliers are traced through the entire engine manufacturing process, from production to warehousing and distribution.

Challenges Addressed: By implementing real-time monitoring and predictive analytics, our customer ensured that raw materials met quality standards, production schedules were maintained, and inventory levels were optimized.

Outcome: The connected supply chain resulted in a 15% reduction in inventory levels, a 20% decrease in expedited freight costs, a 30% improvement in supplier performance metrics, a 25% increase in supply chain capacity, a 30% reduction in machine and process downtime, a 35% reduction in machining defects, and a significant increase in process transparency.

Conclusion

Our customer's adoption of Pico's Connected Supply Chain solution underscores the transformative potential of advanced technology in supply chain management. By achieving end-to-end visibility, real-time data access, and enhanced collaboration, our customer realized substantial cost savings, improved operational efficiency, and stronger supplier relationships. As the manufacturing industry continues to evolve, the success of our customer's connected supply chain serves as a benchmark for organizations seeking to drive innovation and excellence in their supply chain operations.

We would like to thank our customer for their partnership and commitment to innovation in supply chain management. Their success story is a testament to the power of technology in driving operational excellence.