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How to create Cognitive Supply Chain



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In today's rapidly changing business landscape, supply chain management (SCM) plays a key role in organizational success. To keep up pace organizations are increasingly turning to autonomous SCM solutions, which use advanced technologies and data-driven insights. In this blog post, we will explore the concept of autonomous SCM and discuss some of the best practices to enable its successful implementation.

Areas	Trends	Implications
Mass Personalization	Customers demanding personalized products and associated services at affordable prices are a common expectation	Deviation from practices leveraging on Standardization | Higher degree of flexibility and sustainability | D2C
Shorter Production Lifecycle	Large proportion of sales occur in a small window | Rapidly changing consumer needs	Ability to ramp up/ramp down volume quickly | Collaborative relationship between stakeholders
Complex mix of constraints	Demand and Supply uncertainties.| Speedy delivery has become the norm | Rising cost	Integrated and intelligent supply chain | End-to-End real-time visualization capability
Technology change	Competition from unexpected quarters | Dilution in industry boundaries | Weakening of entry barriers	Digital adoption across the value chain | Increased use of data as revenue driver | Collaboration with new partners
Evolving Regulatory	Push for greater efficiency and transparency | Stringent Environmental, Social, and Governance norms	Increased focus on Compliance management | Stress on user privacy, stakeholder impact etc.
Climate Change	Increasing frequency of natural disasters | Stakeholders sensitive about green practices | Sustainability targets from COP26	Real time planning and supply chain risk assessment | Shift towards sustainable supply chain practices



In the context of the changing world, global supply chains need to be run differently and digitally - increasing complexities and evolving market conditions demand a digitally mature and cognitive supply chain to ensure growth, profitability and cx. supply chain need to transform from a 'Traditional linear supply chain' to a 'Concurrently orchestrated eco system'. The concurrent orchestrated ecosystem of SCM, what we call as 'Cognitive Supply Chain', will be powered by data, analytics, Artificial Intelligence and SaaS products working in close orchestration.



Let's discover the key technology enablers to catalyze Cognitive Supply Chain.

Advanced Analytics and Predictive Modeling: Utilizing advanced analytics and predictive modeling is vital in the endeavor of cognitive SCM. By analyzing historical and real-time data, organizations can gain valuable insights into demand patterns, market trends, and supply chain risks. Predictive models enable forecasting demand, identifying bottlenecks, and making initiative-taking decisions. All of these put together help in inventory management, demand forecasting, and overall supply chain responsiveness.

Enabling Real-time Monitoring and Alerts: Cognitive SCM requires real-time monitoring of supply chain activities. By deploying IoT sensors, RFID technology, and connected devices, organizations can track goods, monitor transportation conditions, and ensure timely delivery. Real-time alerts and notifications enable immediate action in case of deviations or disruptions, preventing any adverse impact on the supply chain.

Enhancing Visibility and Collaboration: End-to-end visibility across the supply chain is a key aspect of autonomous SCM. SCM visibility solutions allow organizations to track inventory levels, monitor product movements, and identify potential disruptions. Collaboration among stakeholders, suppliers, manufacturers, distributors, and customers, through digital platforms also enhances transparency and enables effective coordination.

Embracing Agile and Flexible Processes: Cognitive SCM thrives on agility and flexibility. Organizations should adopt agile methodologies and processes that adapt to changing customer demands, market dynamics, and supply chain disruptions. Agile practices like cross-functional teams, iterative planning, and continuous improvement help organizations respond swiftly and efficiently to evolving supply chain challenges.



Continuous Improvement and Optimization: Cognitive SCM is an endeavor of continuous improvement, self-healing, and integrated orchestration across various upstream/ downstream parties. Organizations should regularly analyze performance metrics, identify areas for optimization, and implement process enhancements. Using AI and ML algorithms can automate decision-making processes, optimize routing, and reduce lead times. By continually refining operations, organizations can achieve higher levels of efficiency, cost-effectiveness, and customer satisfaction.

Streamlining Sustainability with SaaS: Navigate your way to a greener future using a Sustainability road map, which includes Carbon accounting, Green Ledger, and Tech M's unique perspective on sustainable practices. Sustainability roadmap has to be an integrated approach right from the product design, make, delivery, logistics, and aftermarket services.

Leapfrog through Generative AI: In the context of ERP SaaS and digital supply chains, generative AI can be used to improve various aspects of the business, such as demand forecasting, inventory management, supply chain optimization and procurement process optimization. For example, Generative AI models can be trained to generate synthetic demand forecasts based on historic In the context of SAP and digital supply chains, Generative AI can be used to improve various aspects of that sales data and trends.

These models can be used to improve the accuracy of demand forecasts, which can help businesses better manage their inventories and optimize their supply chain processes. Additionally, Generative AI models can also be used to generate synthetic inventory levels based on historical sales data and trends. These models can be used to improve the accuracy of inventory levels, which can help businesses better manage their stock levels and optimize their supply chain processes.

GenAI Use-cases in Supply chain	
Supply chain optimization Summary • Identify the most efficient routes and schedules for transportation • Generate best options with justifications for cost savings, reduced lead times, and improved operational efficiency	Supplier risk assessment plans • Identify patterns and trends related to supplier risks. • Generate proactive plan with steps to mitigate risk
Demand forecasting • Gen AI incorporates factors such as seasonality, promotions, and economic conditions. • By training the AI model with this data, it can generate more accurate demand forecasts.	Product development Insights • Generate insights about potential gaps or opportunities • Development of new products or services that cater to emerging trends or customer satisfaction criteria
Sales and operations plans • Generate more accurate and comprehensive plans • Align their strategies, optimize resource allocation, and better respond to changes	Anomaly detection • Gen AI identifies unusual patterns or deviations from the norm. • Quickly detect potential issues, such as bottlenecks, quality problems, or unexpected changes in demand, and address them
Price optimization • Generate optimal pricing strategies • Maximize revenue, profit margins, and market share while maintaining a competitive edge	Transportation and routing optimization Summary • Generate efficient transportation plans
Inventory Management Recommendations • Generating suggestions for reorder points and safety stock levels	Financial optimization Summary • Generate Optimization recommendations for enhancing decision-making processes
Streamline the Supplier Evaluation Process • Uploading multiple docs for giving weightage on Quality, Cost and delivery performance.	...and many more

Paving the Path to a Cognitive Supply Chain is a transformative approach for organizations seeking to enhance their supply chain operations. By embracing digital transformation, with the help of advanced analytics, enhancing visibility, and fostering collaboration, businesses can enable autonomous SCM and gain a competitive edge. Along with real-time monitoring, agile processes, and continuous improvement, organizations can achieve higher operational efficiency and responsiveness, ensuring a resilient and future-ready supply chain.

