

The background features a complex network diagram with nodes and connecting lines. Nodes are represented by small circles in teal, red, and grey, some with numerical labels (2, 3, 4, 6, 9). The network is overlaid with semi-transparent, irregular polygons in shades of teal, red, and grey, creating a layered, geometric effect.

**KINAXIS®**

SUPPLY CHAIN ORCHESTRATION

# Your roadmap to supply chain excellence

# Kinaxis supply chain orchestration maturity model

In the ever-evolving landscape of supply chain management, excellence has not been prioritized equally across industries. Companies under the greatest competitive pressure, such as those in high-tech and CPG, have led the charge in proactively improving operations. Meanwhile, other industries have taken a more reactive approach, enhancing their capabilities only as the need arises. However, the post-COVID era has ushered in a new reality. Heightened market volatility, talent scarcity, new and emerging technologies, increased consumer and business expectations, and intense cost pressures are all demanding a swift acceleration toward supply chain excellence. Merely fine-tuning individual processes like sales & operations planning (S&OP), supply, demand, or transportation management is no longer sufficient to meet today's challenges.

To achieve excellence in this dynamic environment, companies require robust orchestration capabilities across the end-to-end supply chain. These capabilities facilitate rapid decision-making, align corporate strategies, foster seamless collaboration across internal and external boundaries, and enable transparent, optimized, and agile execution of plans toward common objectives.

For 40 years, Kinaxis® has helped companies define their supply chain vision and achieve excellence through strategic guidance and tailored technology roadmaps. Building on that experience, we've introduced a practical [Supply Chain Orchestration Maturity Model and Self Assessment](#) to help you evaluate your current state and identify actionable steps toward achieving your goals.

Our unique assessment provides a comprehensive evaluation of a company's strengths and weaknesses across the broad spectrum of supply chain orchestration capabilities. Spanning strategic, tactical, and operational planning and execution, the assessment encompasses the 14 dimensions of supply chain orchestration: **Objectives, Strategy, Organization & Responsibilities, Circularity, Risk Management, Network Design, S&OP, Planning, Demand, Supply, Agility, Procurement, Production Planning & Scheduling, and Fulfillment.**

A woman with dark hair pulled back, wearing a white blazer over a light blue top, is smiling and looking down at a tablet computer she is holding. The background is a blurred outdoor setting with other people.

## What does the assessment deliver?

The Kinaxis Supply Chain Orchestration Maturity Assessment doesn't just diagnose problems; it provides a roadmap to improvement. Here's what you can expect:

### ✔ Comprehensive evaluation

A detailed assessment of your company's current orchestration capabilities across all 14 dimensions.

### ✔ Actionable insights

Tailored recommendations on how to close gaps and strengthen your supply chain, aligned with industry best practices.

### ✔ Internal alignment

The results help foster alignment across key stakeholders, ensuring that everyone is on the same page when it comes to priorities and investments.

### ✔ A path to sustainable operational excellence

The assessment is designed to help you build a resilient, autonomous, and continuously improving supply chain—one that's prepared for the challenges of tomorrow.

[Take the assessment](#)

# The 14 dimensions of supply chain orchestration

## STRATEGIC PLANNING



Objectives



Strategy



Organization & responsibilities



Circularity

## TACTICAL PLANNING



Risk management



Network design



Sales & operations planning

## OPERATIONAL PLANNING



Planning



Demand



Supply

## EXECUTION



Agility



Procurement



Production planning & scheduling



Fulfillment



# Strategic planning

Strategic planning refers to the process of defining the long-term goals, vision, and overall direction of a company's supply chain activities, including digital transformation. It involves making high-level decisions that shape how the supply chain will be structured and managed to achieve competitive advantage and meet the organization's broader business objectives. Strategic plans must offer direction to tactical and operational plans to ensure alignment with day-to-day operational decisions and support long-term growth, while also being adaptable to changes in the market or competitive landscape.

# Objectives



It all starts with a clear definition of goals: What does success look like, what are the milestones to achieve the goals, and what KPIs need to be in place to track progress towards those goals?

## STAGE 1

- Individual supply chain functions such as planning, procurement, manufacturing, warehousing, logistics, and fulfillment have their own goals focused on functional performance.
- Goals are backward-looking and based on historical achievement.
- Goals are not aligned across the supply chain.
- No distinction is made between goals and metrics, e.g., forecast improvement as a goal doesn't translate to targets within error, bias, or value-add metrics.

## STAGE 2

- Minimizing cost and inventory levels and maximizing service and sustainability emerge as supply chain goals.
- Goals are loosely aligned with the organization's strategic objectives.
- Goals and metrics are not clearly differentiated.

## STAGE 3

- Trade-offs between functional metrics are considered as part of the goal-setting process.
- Supply chain's contribution to bottom-line performance is aligned with corporate strategy.
- Goals and metrics are still used interchangeably.

## STAGE 4

- Supply chain is recognized as having impact on top- and bottom-line company performance, as well as for partners in the value chain.
- Clear alignment between supply chain and corporate strategy.
- Clear differentiation between goals and functional metrics.
- Supply chain investments based on achievement of goals.
- Collaboration beyond the four walls across suppliers, customers, and logistics providers.

## STAGE 5

- Supply chain is an input into corporate strategy.
- Clear vision with tactical milestones to achieve long-term goals.
- Risk mitigation strategies are outlined to respond to unexpected supply chain events.
- Balanced scorecard aligned with corporate goals.
- Goals aligned across the end-to-end internal and external supply chain network.

# Strategy



A formalized supply chain strategy is essential for prioritizing investments, allocating resources, and guiding the organization in achieving its goals. It helps establish and maintain the governance structure, ensuring that the right network, people, processes, and technology are in place to stay ahead of the competition. The supply chain strategy must also align with both corporate and IT strategies to ensure the whole business is properly orchestrated.

## STAGE 1

- Business unit revenue focus with misaligned objectives, firefighting, and no centralized analysis.
- Sales dominates in decision-making.
- Talent management program not formalized; recruiting is ad hoc.
- Metrics are business unit-specific.
- Disparate systems of record (SORs), with limited functional support.
- Projects tackle tactical, immediate operational issues.

## STAGE 2

- Functional decision-making occurs in silos with minimal consideration for other functions and overall costs.
- Organization matures to have functional leaders within business units, regions, or manufacturing.
- Recruiting and talent management is done by function; career paths are limited to single functions.
- Metrics are specific to the function and competing across functions.
- Siloed solutions supporting individual functions; attempts to develop SORs across functions.
- Most strategic supply chain initiatives pursue cost reduction and/or productivity improvement goals.

## STAGE 3

- Integrated supply chain decision-making, with early connections to product and/or sales decisions.
- Cross-functional decision-making across the internal supply chain; emergence of Centers of Excellence (COEs).
- Supply chain-wide recruiting; talent acquisition focused on functional skills; career paths across supply chain roles.
- Metrics are integrated across the supply chain.
- Growing need for systems of differentiation (SODs) supported by master data management (MDM).
- Some strategic initiatives focus on cross-functional benefits across the supply chain to improve overall effectiveness and efficiency.

## STRATEGY



### STAGE 4

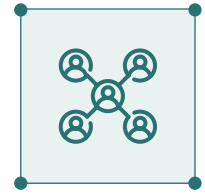
- Integration across the extended supply chain for profitable demand fulfillment and more consistent on-time, in-full (OTIF) delivery.
- Head of supply chain participates in corporate strategy as the end-to-end process owner.
- University recruiting partnerships; talent acquisition incorporates facilitation and collaboration skills; limited career paths beyond supply chain roles.
- Metrics are outside-in across the extended supply chain.
- SODs and enterprise MDM supporting mature processes and collaboration.
- Perfect order and end-to-end inventory and cost KPIs become important to all actors in the supply chain.

### STAGE 5

- Profitable creation of customer value by translating innovation into execution across extended networks.
- Head of supply chain shaping corporate strategy.
- Value-based metrics aligned across the network.
- University partnerships for recruiting with collaborative course development and delivery; fluid career paths between supply chain and other functions.
- Systems of innovation (SOIs), multi-enterprise SORs and SODs; value chain scenario modeling.
- KPIs beyond service, cost, and inventory, such as customer and product profitability are leveraged to assess supply chain performance.



# Organization & responsibilities



The supply chain organization is ultimately responsible for the performance of the end-to-end supply chain. As organizations mature and adopt digital technology and AI, the supply chain organization becomes more center-led, formalized, and strategic. Roles and responsibilities evolve, changing the way we organize supply chains, with technology as a critical enabler that allows supply chain organizations to be global and local at the same time.

## STAGE 1

- Supply chain organization does not yet exist. Functions like procurement, logistics, and production are established.

## STAGE 2

- Supply chain organization appears on paper with a strong focus on establishing planning functions but reporting lines not yet fully formalized with procurement, logistics, and IT.
- Informal project structures appear to transform the supply chain organization and its digital and operational capabilities.
- Occasional network design reviews by external parties.
- Supply chain trying to own the demand signals from sales.
- Supply chain responsible for demand, supply, and inventory planning.
- Supply chain accountable for forecast accuracy and inventory.
- KPIs such as forecast accuracy and/or plan attainment are critical at this stage.

## STAGE 3

- Planning function fully formalized with demand and supply functions owning their outcomes with full accountability to the business.
- Data scientist/analyst and subject matter expert roles emerge.
- Basic supply chain Center of Excellence (COE) in place to ensure consistency and leverage economies of scale.
- Basic collaboration with customers, partners, and suppliers, primarily Excel EDI-based.
- IT program set up to support supply chain organization in its transformation.
- Network design becomes a capability.
- Planning very internally focused.
- Supply chain accountable for forecast value-add.
- Sales & operations planning (S&OP) KPIs become the most critical supply chain success factors.

## ORGANIZATION & RESPONSIBILITIES

### STAGE 4

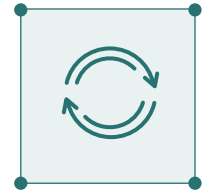
- Supply chain organization starts becoming outward-looking with deeply established channel and supplier collaboration processes.
- Scope of supply chain extends to close collaboration with customers and suppliers to create an end-to-end virtual supply chain organization.
- Supply chain COE deeply engaged in digital innovation and fully collaborative with IT to deliver new capabilities.
- Suppliers and customers become an integral part of S&OP, influencing KPI dashboards.

### STAGE 5

- Supply chain organization is a key pillar for strategic initiatives and supporting the business strategy.
- Supply chain COE and resulting innovations are fully integrated into the operations.
- Continuous supply chain transformation and innovation as part of strategic programs.
- Business and financial KPIs strongly align with supply chain KPIs.



# Circularity



This is rapidly becoming both a huge opportunity and a risk. Global legislation is arriving faster than organizations can cope with, and supply chains are critical to helping companies balance the triple bottom line.

## STAGE 1

- Only manufacturing operations contribute to ESG reporting activities. Process is not formalized and focuses on Scope 1 and 2 emissions.
- KPIs for ESG are site-specific.

## STAGE 2

- Each supply chain function provides ESG input data to ESG initiatives separately.
- Process for collecting data and approaches across different functions are being harmonized and standardized around Scope 1 and 2 emissions.
- Technology is a blocker for progress and the ability to produce forward-looking reports and views of ESG impact.
- Expensive consulting reports based on assumptions instead of accurate reporting based on in-house systems and data.
- Learning phase with limited real ESG impact on a supply chain level.
- KPIs for ESG are tracked at the company level.

## STAGE 3

- ESG and Scope 3 emissions are included in the supply chain strategy and ambitions.
- Pilot initiatives to report Scope 3 emissions are being launched. Corporate ESG programs are not fully aligned with ESG in the supply chain due to data collection challenges, system complexity, and lack of workable reporting tools.
- Recycling and refurbishment pilots are being scaled up in close collaboration with external parties and product development but are not yet deployed companywide.
- ESG reporting starts to evolve from rearview to forward-looking with emphasis on scenarios.
- Need to enrich/extend digital twin becomes critical for Scope 3 visibility and reporting. Real progress starts to be seen in specific areas of ESG strategy.
- Pilots are started to report on Scope 3 emissions.

## CIRCULARITY



### STAGE 4

- Circularity becomes part of mainstream thinking in product design, development, and operations, and successful pilots are deployed across the corporation.
- Creating alliances and pushing for new certification bodies to support their ambitions and achievements.
- Harmonized ESG approach and reporting emerging across all functions with a dedicated strategic function responsible for evaluating necessary investment, capex, and opex implications, and seeking board-level approvals for investments.
- ESG is a main pillar of all CEO communications and translates into strategic pillars and programs across all functions, coordinated by a strategic group with a dedicated project management office.
- Scope 3 emissions become a corporate initiative, with corporate KPI dashboards.

### STAGE 5

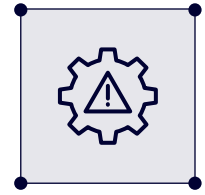
- ESG goals and targets are communicated downstream to suppliers. Joint scorecards and governance are put in place across multiple tiers.
- Scope 3 emissions initiatives and related KPI dashboards are extended to suppliers and customers.
- Incentives are provided and there is education/knowledge transfer from best-in-class performers to the rest of the supplier ecosystem.
- Digital twin and new external data sources and certificate providers are used to track sustainability performance and certify reported emissions.
- Circularity is mainstream thinking across all functions in the business.



# Tactical planning

Tactical planning refers to planning activities that are typically focused on the next 18 months to three years, depending on industry, and sits across network design, sales & operations planning (S&OP), and risk management. Tactical plans must align with the broader strategic goals of the organization, translate them into actionable steps, and prioritize across resources, processes, and personnel to enable day-to-day operations. Companies advanced in maturity will also incorporate strategies around sales & operations execution (S&OE) to better connect planning and execution.

# Risk management



Risk management in this context refers to the governance of all supply chain-related business continuity and non-compliance risks linked to the environment, people, processes, technology, and the use of AI. Without robust IT and governance structures to ensure compliance and manage risks, a supply chain can never be properly orchestrated to continuously improve resilience. As companies mature, risk tracking and alerts expand to become always-on, across all dimensions of Environmental & Social Governance (ESG).

## STAGE 1

- Operations are managed in siloes without consistency of practices and policies across regions or functions.
- No shared operating goals across functions. Isolated decisions are made based on differing assumptions.
- Sustainability activities are implemented in silos, with the purpose of achieving regulatory compliance.
- No formal technology or AI strategy.
- No integrated supply chain IT strategy, many local systems, supported by spreadsheets.

## STAGE 2

- Awareness of initiatives in other functions that may affect the supply chain.
- Some best practice sharing, initiated by local functions or business units with little coordination.
- Goal is to create a volume-based operational plan based on the demand forecast.
- Greater focus on inventory and cost-based alignment with financial plans.
- Small sustainability initiatives focused on awareness by geography, function, or operational area.
- Risk management is functionally led, with mitigation emphasizing the impact on costs.
- IT business partner supports the deployment of supply chain technology.
- Uncoordinated deployment of AI, with no compelling advantages.

## STAGE 3

- Supply chain initiatives are coordinated with other internal functions.
- Center of Excellence (COE) supports process management and coordinates supply chain initiatives.
- Demand and supply are balanced across the end-to-end supply chain in the tactical time horizon. Strong cost-based alignment to financial plans.
- Full integration across internal operations and limited collaboration with customers and suppliers.
- Resilience expands to the end-to-end supply chain.
- Coordination of sustainable initiatives supporting corporate objectives.
- Supply chain governance is aligned with financial risk management processes.
- Supply chain and IT co-develop supply chain IT strategy.
- Coordination of technology and AI pilots, with properly developed use cases.

## RISK MANAGEMENT

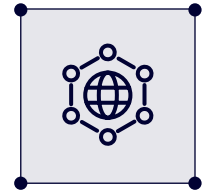
### STAGE 4

- Supply chain initiatives owned by the head of supply chain as a part of the broader governance that synchronizes all internal and external initiatives.
- Creation of a demand-driven, profitable supply response in the midterm time horizon.
- Alignment with financial plans to profitably achieve revenue goals, excellent service, and customer delight.
- Supply chain starts to drive sustainability strategy.
- Extended supply chain risk identification and profitable mitigation by a dedicated supply chain risk management group.
- Goal of resilience expands to create transparency with customers and suppliers.
- Balanced management of end-to-end product supply performance KPIs in alignment with sales and service objectives.
- Widespread and coordinated deployment of technology and AI to automate the obvious and support better decision-making.

### STAGE 5

- Optimized multi-enterprise initiatives with joint value identified and realized.
- Coordinated enterprise and network decision-making to create value. Extensive use of multi-partner councils.
- Sustainability helps shape a preferred future. Products or methods of manufacture are adjusted based on sustainability impacts.
- Planning for the strategic time horizon includes risk assessment, profitable business response, and network resilience based on collaboration.
- Supply chain risk management (SCRM) is part of overall enterprise risk management. Value potential analysis results in acceptance of some risk.
- A quality, innovation, and operational excellence culture is supported by a high-performance management system.
- Technology is a source of competitive advantage. AI is used to support decisions (in the loop), AI-based decisions validated by people (on the loop), autonomous AI-based decisions (out of the loop).
- External data sources and providers are leveraged to track the end-to-end supply chain; advanced simulations and real-time tests ensure ESG compliance.

# Network design



Delivery of the strategy requires close attention to the design of the supply chain network, ensuring that it will meet future requirements and provide the level of flexibility to deliver against cost, resilience, service, and sustainability requirements.

## STAGE 1

- Focus on designing a production and supplier network that can meet customer demand.
- Available cost information is incomplete, mainly around fixed and variable production costs.
- Procurement provides cost of supplier materials for qualified portfolio of suppliers.
- Production sites are selected based on market demand, capital efficiency, raw material access, or tax incentives.
- Logistics (warehouse, transport, inventory) is modeled separately to ensure delivery of products at lowest cost.
- Goal is to understand long-term cost projections around production, procurement, and logistics for different demand scenarios.

## STAGE 2

- Focus is on designing the best network to ensure reliable supply at the lowest cost
- Analysis includes trade-offs around make versus buy.
- Production processes and sites are factored to understand constraints and leverage economies of scale.
- Sizing of storage and distribution capacity at production and logistics sites are included in the simulation models to avoid logistics bottlenecks during production. Logistics service arrangements are defined locally for each site.
- Goal is to understand logistics, production, and procurement processes and constraints that could drive up overall supply chain costs.

## STAGE 3

- Focus is on balancing supply cost, agility, resilience, and sustainability.
- Global suppliers and contract manufacturers are integrated into the supply strategy and product innovation process, with emphasis on optimized cost to deliver.
- Sites and production units are segmented based on markets or products; strategic make versus buy assessment of contract manufacturing.
- Logistics service providers (LSPs) are segmented based on strategic importance to the integrated supply network; collaboration and outsourcing with strategic providers.
- Supply planning KPIs, such as safety stock targets, become part of network design initiatives and are frequently reviewed, considering the service impact across the network.
- Central/logistics planners develop detailed capacity KPIs and prepare for future inbound/outbound volumes, attempting to break the silos between production planning, transport, and warehousing, and coordinating logistics with production.





## NETWORK DESIGN

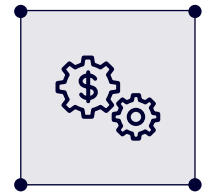
### STAGE 4

- Focus is on optimizing the balance between cost, working capital, service, and sustainability by product.
- Corporate Center of Excellence (COE) hybrid for shared services and processes. Sourcing is aligned with product supply strategy, using supplier segmentation, portfolio, and contract optimization for lowest total cost.
- Site location and design consider the performance of the combined manufacturing network.
- Storage and distribution network design includes consideration of manufacturing assets to optimize integrated product supply.
- Network scenarios and digital twins used for strategic network design.
- Central/logistics planners manage real-time trade-offs between long-term inbound volumes and capacity constraints to make informed decisions around labor requirements and strategic network sourcing needs.

### STAGE 5

- Focus is on differentiating and dynamically optimizing product supply responses by demand segment.
- Segmented supply strategies are aligned with market strategy to create value and reduce risk. What-if scenario assessments are embedded into supplier operations, leading to optimized cost to serve.
- Virtual capacity is enabled with real-time visibility of process capabilities for integrated optimization and reliability of product supply.
- Real-time visibility into network operations enables a control tower capability for event management to mitigate risks and continuously optimize service.
- Central/logistics planners manage trade-offs between long-term inbound/outbound volumes and capacity constraints to make informed decisions on inventory-holding decisions.

# Sales & operations planning



Sales & operations planning (S&OP) is the process that connects other business functions to the supply chain, helping organizations to operationalize and execute the business strategy and other functions to deliver their own objectives.

## STAGE 1

- No formal S&OP process, shared S&OP goals, or agenda; meeting focus is on immediate pain points.
- S&OP/operational plan does not align with commercial and supply chain goals.
- S&OP/operational plan is not aligned with the financial plan.
- S&OP process is short-term and focused on firefighting to resolve current operational imbalances in supply and demand.
- S&OP cycle is not well-defined, with meetings held on an ad hoc basis, if at all.
- S&OP meetings are focused on past business performance, with little dedication to forward-looking plans.
- No formal/established/centralized KPI tracking process for supply chain management metrics.

## STAGE 2

- There is a formal S&OP process, albeit not followed cross-functionally.
- Cost-based alignment between financial and supply chain plans is weak.
- S&OP benefits manifest in improving demand forecast accuracy or capacity utilization.
- S&OP process is mostly short-term and operationally focused, e.g., 0-3 months.
- S&OP is established as a monthly cycle.
- S&OP plan is compared with the annual plan, but each is developed independently.
- KPIs around forecast accuracy, inventory turns, and on-time, in-full (OTIF) emerge but remain siloed and tracked separately by different stakeholders.

## STAGE 3

- S&OP benefits are qualitative, based on feedback from various functional areas about the benefits of better communication enabled through the process.
- S&OP meeting seeks to expand its focus to the tactical planning horizon, beyond the current quarter, with mixed results.
- Increased emphasis on aligning the S&OP cycle and time horizon with the annual business planning cycle.
- Realization that the monthly S&OP cycle must be supported by weekly operational meetings to ensure alignment of operational and tactical plans.
- All planning KPIs are reported as part of S&OP and compared to inform tactics and trade-offs that can influence other functional areas.

## SALES & OPERATIONS PLANNING

### STAGE 4

- S&OP benefits are more quantitative, such as higher customer service scores and increased market share.
- S&OP process is successfully managing trade-offs in the tactical planning horizon, beyond the current quarter, covering the three months through the current and next business plan/budget time horizon.
- Cycle and time horizon covered are synchronized between the S&OP process and the annual business planning and budgeting process.
- Sales & operations execution (S&OE) weekly process is tightly aligned with the monthly S&OP process.
- In addition to planning KPIs, business and financial KPIs are reported and tracked as part of the S&OP process and consolidated and weighted in the balanced scorecard based on how they influence business outcomes.

### STAGE 5

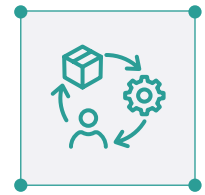
- Emphasis is on long-term strategic plans for the business and the supply chain.
- Full alignment between innovation and strategic goals, and operational decision-making.
- S&OP benefits are more strategic, such as supporting the company's growth plans.
- Other benefits emerge such as higher percentages of successful product commercialization, improved product launch, and speed to market.
- Monthly S&OP process expands beyond the tactical planning horizon, managing long-term trade-offs in the two- to five-year time horizon.
- S&OP process is aligned with long-term strategic business planning.
- S&OP process is more dynamic, aligning near real-time trade-offs with the tactical plans.
- Digital twin extends over the end-to-end supply chain to allow complete evaluation of scenarios.
- Product portfolio and ESG KPIs become part of the S&OP balanced scorecard. Planning KPIs, business and financial KPIs, and ESG KPIs also become part of S&OE for real-time decision-making and to support trade-off decisions between service, cost, inventory, profitability, and environmental impact.



# Operational planning

Operational planning refers to planning activities that take place in the coming weeks or months, depending on industry, and are focused on strategy around supply and demand. These plans should align with tactical and strategic planning and inform, as well as learn from, activities in the execution horizon to adapt fast to the latest reality.

# Planning



A goal without a plan is a wish. Planning connects the goals and strategy with execution and enables us to dynamically leverage an optimally designed network in the way that it was intended. Planning takes inputs from what is happening on the ground in real time and ensures that forward-looking plans have the agility and resilience necessary to deliver against corporate KPIs.

## STAGE 1

- Plans are volume-based using orders or historical shipments by business unit or region.
- Planning takes place in operational centers such as production sites or warehouses.
- Planning and fulfillment KPIs focus on maximizing fill rate attainment.

## STAGE 2

- Operational plans are volume-based using sales forecasts and constrained supply capability.
- Planning hubs are responsible for planning across multiple sites.
- There is a formal sales & operations planning (S&OP) process, albeit not followed cross-functionally.
- Cost-based alignment between financial and supply chain plans is weak.
- Planning systems focus on production master planning to meet demand.
- Operational planning KPIs emerge around forecast accuracy, inventory cover, and service (on-time, in full) but are tracked separately by demand and supply teams.

## STAGE 3

- Aim is to balance supply and demand volume across the end-to-end supply chain: plan, source, make, and deliver.
- There is stronger, cost-based alignment between the financial and supply chain plans, with an emphasis on achieving revenue projections.
- Planning systems become more integrated with execution systems, such as procurement, production, and logistics. Collaboration with execution parties is still siloed, leading to latencies.
- Operational planning becomes more sophisticated, using KPIs and metrics to support root cause analysis. Service, inventory, and demand KPIs from different teams are consolidated to inform tactics and trade-offs that can influence other functional areas.

## PLANNING

### STAGE 4

- Aim is to create a demand-driven, profitable supply response across the extended supply chain.
- Centers of Excellence (COEs), planning hubs, and market organizations work together, centralizing pieces that make the most sense to put into the COE or hubs and localizing where detailed market knowledge is essential.
- There is alignment between financial plans and supply chain plans, with a goal of achieving profitability.
- Planning teams simulate what-if scenarios using digital twin technologies.
- Planning and execution (procurement, production, and logistics) are fully synchronized, with minimal to no latencies.
- Customer experience and perfect order metrics become the main drivers of competitive advantage, measuring all dimensions of order fulfillment and analyzing potential service issues. Forecast, inventory, and cost can now also be assessed in greater detail, as well as the financial impact of decisions on revenue or profitability.

### STAGE 5

- Decision-making is coordinated across the enterprise and network to create value across the full planning horizon.
- Emphasis is on long-term strategic plans for the business and the supply chain.
- There is full alignment between innovation and strategic goals and operational decision-making.
- Digital twin extends over the end-to-end supply chain to allow complete evaluation of scenarios.
- Planning systems proactively track execution (procurement, production, and logistics) and ESG impact, leveraging automation and AI-infused intelligence.
- Decision automation with intelligent, data-driven scenarios eliminates 'gut feeling' and biased decision-making.
- KPIs reflect real-time trade-offs between financial, fulfillment, inventory, and demand, as well as ESG and returns metrics.

# Demand



The science of demand management is increasingly important for the supply chain. Capabilities such as demand sensing, demand forecasting, and demand shaping have a real impact on performance. For companies with low maturity, demand management is typically done from the inside out, while leading organizations are heading towards outside-in processes.

## STAGE 1

- Demand forecasting is a part-time activity within sales or marketing. Demand is something to which the company reacts.
- The demand forecast is based on the sales budget for finished goods at the category, brand, or family level.
- Demand visibility is limited to orders. Industry channel dictates demand-shaping levers.
- Spreadsheets are common with some point solutions for forecasting.
- Demand variance against the sales budget is the key measure with no measurement of promotion or pricing impact on demand.
- Forecast accuracy is measured at more aggregated levels, e.g., product families, all locations, monthly buckets, sales & operations planning (S&OP).

## STAGE 2

- Demand management sits within a commercial business unit organization. Demand planner training exists but with a limited career path.
- Demand forecasting is enhanced (based on sell-in to the channel) with shaping levers such as sales incentives, price, and promotion, as applicable.
- The unconstrained demand plan by item/location level is based on statistical and collaborative methods. Demand plan is influenced by financial targets and finalized in S&OP.
- Channel and point of sale (POS) data is received from distributors and customers but not scaled.
- Integrated supply chain planning suite/platform with standardized statistical models. Limited collaborative workflow to customer relationship management (CRM) systems.
- Demand forecast error is measured. Accountability is established but improvements are not tied to incentives.
- Forecast accuracy or error metrics are introduced, such as Mean Absolute Percentage Error (MAPE).

## DEMAND



### STAGE 3

- Forecast is developed by demand planning roles within supply chain or sales and marketing organizations.
- Demand is forecast at the item/location level using a limited amount of market intelligence.
- Demand visibility is generally limited beyond channel.
- Some pre-event analysis estimates demand-shaping impact on volume and efficiency.
- ERP-based consolidation with gaps filled by spreadsheets. Basic time-series modeling to generate the forecast, using business intelligence for metrics.
- Demand forecast error is measured but with limited understanding of error sources. Limited efforts to measure the impact of demand-shaping actions.
- More sophisticated measurement KPIs, such as forecast value-add or bias, gain importance alongside forecast accuracy.



## DEMAND

### STAGE 4

- Demand management is often structured in a central function. Demand includes what can be created to maximize growth and profitability.
- Demand planning includes attribute-based modeling and incorporates a wide array of external inputs and shaping estimates.
- Collaboration with network partners to sense demand. Shaping demand means influencing consumer/customer behaviors based on market insights.
- Full optimization capability for demand shaping levers. Demand sensing includes fully scaled enterprise demand signal repositories (DSRs).
- Profitable perfect order and forecast value-add for all inputs. Measurement of demand shaping success includes market share, cash flow, and profit impacts.
- Cross-functional incentives are based on business outcomes. Integrated development and career path ladders.
- New product launch (NPL) risks assessed and alternate price/profit scenarios evaluated.
- Additional forecast drivers and marketing intelligence are assessed and measured to improve the statistical and consensus forecast.

### STAGE 5

- Demand management is structured regionally as a shared service across multiple business unit organizations.
- Demand is analyzed based on sell-through in the channel and shaped to optimize performance. Forecasting for new product launches is a core competency.
- Consensus demand plan by item/location/customer using collaborative, risk/range modeling, and stochastic (probabilistic, time series, and causal) methods.
- Demand sensing inputs including POS, channel sales, and inventory signals are used to produce daily or weekly forecast updates for operations use.
- Central data warehouse, including DSRs and consensus workflows, supports demand sensing and shaping. Manual updates between CRM and S&OP.
- Customer forecast accuracy and sources of forecast error are tracked. Cross-functional measurement of promotion and pricing on baseline and incremental volume. Incentives exist for improvement. Analytical acumen and domain experience are valued. Demand manager training and career path options exist.
- Metrics emerge to measure the success of automated forecast generation.

# Supply



For many years supply planning focused solely on creating feasible production plans; production sites then took care of the scheduling details. As disruptions and variability in supply increase, detailed constraint reviews and scenario planning become critical. Today, advanced techniques and scheduling solutions enable businesses to produce the best production plan and most granular schedule that accounts for supplier capacity, materials availability, and sourcing considerations.

## STAGE 1

- Product supply is managed within each division or business unit.
- Production planning and master scheduling are not aligned to sales or business plans and focus on controlling inventory and meeting orders.
- Local supplier relationships are managed informally. Manual processes including invoice settlement. Inbound freight is embedded in the raw material price.
- Autonomous site operations emphasize safety and compliance. Frequent production changes in response to exceptions and constraints.
- Separate functional operating and costing systems. Spreadsheet models provide decision support.
- Reactive approach to variation and break-fix approach to defects. High inventory write-offs, frequent supplier failures, expedited shipments, and schedule changes.
- KPIs, such as inventory turns, are tracked at more aggregate levels with limited drill-down possibilities.

## STAGE 2

- Scope of supply chain includes planning and logistics.
- Supply plans developed based on a forecast use inventory to minimize production and distribution costs. Standard planning process introduced for efficiency.
- Automated replenishment, ordering, invoicing, and supplier payment. Supplier scorecards are used in contract negotiations.
- Regional manufacturing is aligned to business units. Cross-site best practice sharing for safety, cost, and quality. Factory scheduling manages local constraints.
- ERP-based material resource planning and inventory replenishment functionality and bespoke order management and procurement systems.
- Focus on execution and adherence to functional plans and policies to control cost creates conflict between supply and sales objectives.
- KPIs related to inventory become more sophisticated and granular to get a better handle on inventory levels by SKU.

## SUPPLY

### STAGE 3

- Scope includes demand and supply planning, logistics, procurement, strategy, and design.
- Decisions for product supply optimization supported by what-if analysis. Supply planner coordinates response to changes with logistics and supply management.
- Suppliers and contract manufacturers are integrated into supply strategy and product design. Collaboration includes supplier replenishment arrangements.
- Sites are optimized for flexible, agile supply in response to demand complexity and volatility. Shorter run sizes for selected products for pull replenishment.
- Supplier and carrier collaboration platforms. Service parts optimization leverages usage and failure data.
- Focus is on supply resilience and total cost to deliver with separate performance metrics for each major supply segment.
- KPIs, such as service levels, are tracked at a more granular level, for instance, on-time, in-full (OTIF), and with root cause analysis.

### STAGE 4

- Scope includes supply planning, procurement, and logistics, with a supply chain Center of Excellence (COE) organization.
- Supply plan model incorporates capacity and supplier constraints. Inventory targets support supply and service trade-offs.
- Sales & operations planning (S&OP) decisions are translated into production, workforce, and distribution plans.
- Supply contract portfolio is aligned and managed to support product supply strategy. Supplier segmentation and contract management capabilities are mature.
- Advanced supply planning and supplier portals.
- Manufacturing capabilities emphasize reliable supply to meet demand and balance capacity utilization with end-to-end inventory levels.
- Balanced management of end-to-end product supply performance KPIs in alignment with sales and service objectives.

### STAGE 5

- Scope is all supply strategy and operations, including corporate quality and risk management.
- Accelerated and optimized response to changes based on full operating visibility, analytics, and business rules.
- Segmented supply strategies are aligned with market strategy to create value and reduce risk. What-if scenario assessments are embedded into supplier operations.
- Net supply plan changes are communicated directly to integrated carriers and suppliers.
- Supply response is dynamically optimized for revenue, profitability, and sustainable value creation across multiple tiers of the value chain.
- Visibility across the multi-tier supply network. Supply planning and scheduling are integrated with manufacturing execution systems. Commodity risk management platforms are in play.
- Quality, innovation, and operational excellence culture is supported by a high-performance management system.
- KPIs, such as inventory parameters, are continuously updated and maintained and frequently stress tested to ensure the resilience of the network.



# Execution

Execution refers to procurement, production, and fulfillment which action plans in near to real-time. But, while a plan is only as good as one's ability to execute on it, planning and execution often occur in complete isolation, with planners working to craft the perfect plan and production and logistics teams continually adjusting their approach to new realities. Execution must also be reliable and agile, aiming to achieve sales and profit goals with proactive responses to changing conditions faster than competitors.

# Agility



Having a plan is great, however, every supply chain needs a playbook and a clear set of tactics to adjust to changes as soon as they occur and bridge the gap between the plan and what is happening in real time. Building such control tower capabilities is one of the most important sources of competitive advantage on the journey toward supply chain excellence and proactively achieving sales and revenue targets.

## STAGE 1

- Poor/inconsistent functional performance across supply chain processes.
- Process relies on inconsistent sources of demand signals.
- Production and inventory planning process is fragmented, locally based, and reactive.
- Demand forecast, annual budget, and supply response are not reconciled into a single plan.
- Sales & operations planning (S&OP) meeting is focused on past business performance and current period decisions.
- Changes to the plan and released orders are updated with a delay, causing misalignment and sub-optimal decisions.

## STAGE 2

- Focus is on performance improvement in demand and supply planning.
- Weak, cost-based alignment between financial and supply chain plans.
- Focus shifts to cost control.
- Demand signals are internal as well as external customer orders and forecasts.
- Collaboration is internally focused within the supply chain with limited participation or input from outside parties.
- Quality of the plan improves, ensuring ability to execute well, but updates remain delayed, causing misalignment and sub-optimal decisions. Lead time attainment becomes a very critical KPI.

## STAGE 3

- Emphasis is on functional excellence in the supply chain.
- Internal integration in the supply chain.
- Focus is on understanding the trade-offs made and total costs associated with supply chain decisions.
- Collaboration is mostly internally focused within the company, with some ad hoc, disconnected supplier and customer collaboration.
- Use of AI to improve efficiency and drive more effective decision-making.
- Plans and released orders are more aligned with internal goals and trade-offs. Lead time reduction becomes a very critical KPI.

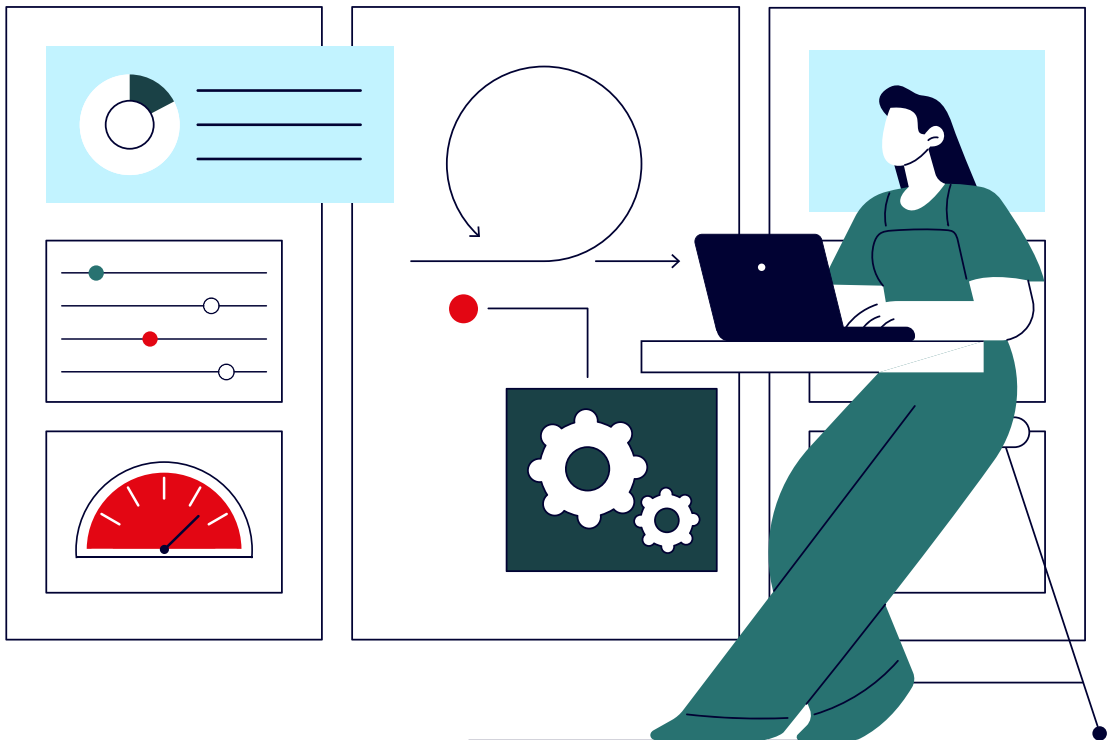
## AGILITY

### STAGE 4

- Focus is on financial and supply chain alignment to profitably meet revenue projections, taking into account trade-offs across the extended supply chain.
- Improved demand sensing capabilities.
- Stronger supplier collaboration for profitable supply response in the extended supply chain.
- Regular sales & operations execution (S&OE) process in place with weekly or bi-weekly meetings to ensure alignment with the tactical plan generated in the monthly S&OP meetings and make corrective short-term trade-offs.
- AI used to automate repetitive or data entry-type tasks.
- Overall planning cycle time reduction is a very critical KPI.

### STAGE 5

- Focus is on profitability and growth, relying on overall business response.
- S&OP and S&OE processes seek to create and shape market demand based on business strategy across the network.
- Collaboration evolves into many more strategic relationships with trading partners to create overall network value.
- Structured framework for using AI to align planning and execution.
- Overall planning and order lifecycle time reduction is a very critical KPI.



# Procurement

Procurement is where it all starts. A company needs to manage many tiers of suppliers of incoming raw materials and components, their capacities, delivery performance, and quality. Their performance and capacities are integral to planning.



## STAGE 1

- Procurement is local at affiliates and manufacturing sites and organizationally siloed.
- Local objectives and KPIs are focused on purchase price variance (PPV).
- No common nomenclature or master data across the enterprise, e.g., part numbers, supplier data.
- Manual data capture and translation tables.
- Objectives and KPIs are established for key materials/suppliers focused on cost.

## STAGE 2

- Global procurement function consolidates quantities for key materials/suppliers for pricing negotiation.
- Technology leveraged to report and prioritize spend reduction initiatives.
- Spend analysis becomes more detailed and specialized considering product-specific and service cost elements.
- Focus of logistics spend analysis is on freight rates, contract compliance, incoterms, and penalty cost avoidance.
- Supplier quality and on-time KPIs also become priorities.



## PROCUREMENT

### STAGE 3

- Procurement function has global ownership functionally and organizationally with global KPIs.
- Master data is standardized in an enterprise ERP with automated data consolidation and reporting.
- Objectives and KPIs are global but still focused on cost.
- Collaboration and automated transactional data exchange with suppliers, e.g., ASNs, delivery dates, invoicing.
- Joint operational scorecards with shared objectives between suppliers and their customers emerge.

### STAGE 4

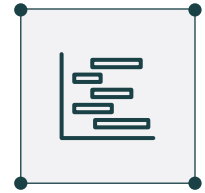
- Procurement transforms into strategic sourcing and becomes a part of the supply chain organization.
- Strategic partners are identified with relationships that go beyond transactional to win/win.
- Shared end-to-end supply chain objectives and KPIs, e.g., inventory, total supply chain cost.
- Procurement is responsible for supplier risk management and mitigation.
- Procurement function is included in the sales & operations planning (S&OP) process.
- Collaborative efforts to improve scorecards and reward suppliers and customers become commonplace.

### STAGE 5

- Supplier network becomes a key component of network design.
- Procurement function is responsible for Tier 1, 2, & 3 supplier Environmental & Social Governance (ESG).
- Key suppliers are a part of product and process co-development.
- Supplier collaboration goes beyond transactional to interfaces with supplier ERPs for exchange of transactional, execution, and planning data.
- Suppliers are integrated into the core planning system as virtual sites.
- Key suppliers and contract manufacturers are included in the S&OP process.
- Strategic collaboration with suppliers around long-term goals and plans becomes commonplace.



# Production planning & scheduling



Historically, general production plans were created and details would emerge in schedules on site, based on activities on the shop floor and to minimize changeovers on the production lines. Due to growing disruptions, such as unreliable suppliers and workforce shortages, it became increasingly challenging to maintain alignment between schedules and the initial production plan. Today, production planning and scheduling must be continuously synchronized to ensure the production plan reflects the latest optimized schedule, and the schedule is based on the latest production plan priorities in terms of materials, capacity constraints, priorities, and business objectives.

## STAGE 1

- Master production schedules have been created, but there is no formal, detailed production scheduling process. Operations are performed at a daily level and the shop floor executes tasks ad hoc.
- Production scheduling relies on manual methods. Schedules are created using Excel, Post-its, or paper.
- Production scheduling and planning are separate business processes/units.
- Focus is on firefighting and resolving immediate production issues.
- Schedules generated are inefficient with frequent errors in the scheduling process. Operations are not coordinated across different work centers with high changeovers and long set-up times.
- Scheduling is not aligned with supply planning or other supply chain functions. There may or may not be an Advanced Production Scheduling (APS) system.
- Poor visibility into production capacity and constraints.
- KPIs typically reflect efforts to maximize production capacity utilization and minimize production cost.

## STAGE 2

- A basic production scheduling process is in place but not consistently followed.
- Use of one or more point solutions for production scheduling. Frequent changes to the schedule in the frozen horizon.
- Understanding of production capacity and constraints at a local level.
- Production schedules are not well-integrated with other functions.
- Primarily focused on executing short-term operations, such as expediting high-priority orders, but not necessarily on improving long-term KPIs, such as throughput and utilization.
- Significant shifting between the near-term production plan and schedule.
- Some production planning requirements are reflected in the supply plan (major setup, accurate constrained capacities, shared resource constraints, etc).
- Production schedule adherence KPI improvements indicate production is becoming more reliable.

## PRODUCTION PLANNING & SCHEDULING

### STAGE 3

- An enterprise-wide production scheduling solution is implemented.
- Production scheduling is integrated with supply planning and business planning cycles with assessment of how scheduling impacts the overall supply chain.
- Improved tools for monitoring production performance and constraints. KPIs such as throughput, utilization, waste, and scheduling adherence and attainment are established.
- Scheduling rules and logic are implemented to improve schedules and KPIs.
- Introduction of feedback mechanisms for continuous improvement.
- Ability to refresh scheduling data at regular intervals, though not yet real time. Visibility broadens into upstream supply constraints.
- Paperless presentation of production plans and schedules to suppliers and the shop floor.
- Some shifting between the near-term production plan and schedule.
- Some production planning requirements are reflected in the supply plan (multi-level constraints, basic campaigning, economic order quantity, etc).
- Production plan adherence KPI becomes critical to align production with business priorities, requiring tight integration of production plans and schedules.

### STAGE 4

- Measurable improvements in scheduling KPIs, such as higher throughput, improved machine utilization, and better schedule attainment.
- Use of advanced scheduling meta-heuristics/optimization/objective function-based scheduling and planning algorithms.
- Ability to perform fast what-if analyses to evaluate disruptions to production schedules.
- Automation of common task flows, what-if scenario creation and comparison, and continuous improvements including fine-tuning algorithm parameters.
- Real-time scheduling data refreshes and full visibility to upstream, downstream, and shop floor status.
- Real-time adjustments based on changing conditions.
- Minimal shifting between the near-term production plan and schedule.
- The supply plan closely reflects production planning requirements, e.g., complex constraint management, basic sequencing, sequence-dependent changeover, etc.
- Ability to make schedule changes at shorter notice resulting in improved supply plan attainment KPIs.

### STAGE 5

- Production planning and scheduling are flexible to adapt to any changes while still aligned with and supporting long-term strategic business and supply chain goals.
- Monitoring increased productivity within and across manufacturing sites. Repeatable best practices created.
- Multi-tier supply network visibility into the impacts of the production schedule.
- Ability to anticipate and proactively manage future production needs and constraints.
- Utilization of KPIs to foster continuous improvement initiatives with ongoing refinement of production scheduling processes based on data-driven insights.

# Fulfillment



Frictionless order fulfillment is the gold standard of operational excellence. In the past, fulfillment was considered the last step in a sequential chain of planning activities. This mindset resulted in reactive supply chains struggling to manage last-minute demand changes and logistics disruptions. Today, reaching that frictionless ideal requires synchronization not only between inventory availability, transportation, warehousing, and distribution but also cross-functionally across the end-to-end supply chain to monitor and influence the impact on overall performance.

## STAGE 1

- Each production site and sales office manages and processes orders separately.
- Focus is to capture the order and deliver on time. Customers are all treated the same.
- Batches of daily orders are delivered on a 'first come, first served' basis with manual transaction processes and invoicing and frequent expediting.
- Use of spreadsheets and email/ phone/fax to schedule and track transport.
- Cumbersome administration for outsourced freight payment and export compliance. Frequent manual inventory counts.
- Simple delivery KPIs.

## STAGE 2

- Fulfillment operations are not centralized, with regional service centers located close to markets. Coordination emerges across supply chain functions (order management, warehousing, transport). Returns and/or spare parts are handled separately.
- Formal processes emerge to communicate with logistics service providers, often through systems with integrations and protocols, with bespoke systems and processes per partnership.
- Orders are still executed in daily batches. Feedback from logistics providers creates some visibility into milestones, delivery, and payment.
- Some automation and digitization of processes emerge but remain siloed across order, inventory, warehousing, and transportation management functions.
- Focus is on strengthening the outbound supply chain.
- The main and most important KPI in this stage is on-time, in-full (OTIF) order fulfillment.

## FULFILLMENT

### STAGE 3

- Customer service centers are organized by channel and coordinate all involved functions (orders, inventory, warehousing, transport, etc).
- Common practices and process excellence are used to translate customer needs into differentiated service models.
- Advanced order management capabilities emerge, e.g., Available to Promise (ATP), Collaborative Planning Forecasting and Replenishment (CPFR), e-commerce support, and Vendor Managed Inventory (VMI).
- Focus expands to include inbound and outbound fulfillment.
- Logistics managed locally or by region; not yet coordinated globally.
- Carriers managed more strategically as partners with better systems integration and hourly feedback. Lack of synchronization across modes and transport legs.
- Automated spend management and compliance monitoring emerge.
- Leveraging technology to automate all warehouse operations, e.g., proof of delivery for on-time delivery performance, etc.
- Scorecards with detailed operational metrics, including customer experience measurement, cost variance analysis, and invoice accuracy.
- Main KPI is OTIF at the best cost.

### STAGE 4

- Customer service centers are part of an established customer logistics function.
- Market priorities and service strategies define regional and local fulfillment models.
- Carriers are managed as strategic suppliers with real-time updates. Electronic tendering.
- Automated order-to-cash-process with ATP and extended with Capable to Promise (CTP), leveraging network visibility, track and trace, and self-billing.
- Integrated global trade management. Integrated and optimized logistics including warehousing and transportation. Inbound, outbound, and reverse flows synchronized across all modes, legs, and regions.
- Real-time feedback with planning, ensuring supply and demand stay in sync.
- Main KPI is OTIF at the highest profitability with detailed, order-level drill down around cost-to-serve.
- Detailed non-conformance analysis to understand outliers and continuously refine spend.

### STAGE 5

- Control tower orchestration for an optimized balance of regional, local, and outsourced service across channels.
- Differentiated service response segmented by customer and supply chain to achieve desired outcomes.
- Order management is aligned with customer differentiation and supply chain segmentation.
- Real-time, continuous, and dynamic replanning and rescheduling of all logistics activities. Feedback loop with planning and joint scenario modeling.
- Service provider relationships are managed for innovation and shared value.
- Detailed cost granularity is now available for each customer order and product for in-depth profit and loss analysis.
- Main KPI is OTIF at the highest profitability and lowest sustainability impact.

# Preparing for the **AI-driven** supply chain of the future

As supply chains continue to evolve, the future will belong to companies that can seamlessly integrate advanced technologies, drive cross-functional collaboration, and build resilient, adaptable networks. The Kinaxis Supply Chain Orchestration Maturity Model and accompanying assessment are powerful tools to help organizations navigate this complex landscape, providing a clear path to achieve supply chain excellence.

By understanding your current maturity level across these 14 critical dimensions, you can identify areas for improvement, align your supply chain strategy with business objectives, and prepare for an AI-driven, sustainable, and agile future.

Whether your company is just beginning its orchestration journey or already leveraging cutting-edge technologies, the assessment will guide you in building a supply chain that's not just resilient—but future-proof.

## Yesterday's techniques are no match for today's challenges

Kinaxis is a global leader in modern supply chain orchestration, powering complex global supply chains and supporting the people who manage them, in service of humanity. Our powerful, AI-infused supply chain orchestration platform, Maestro™ combines proprietary technologies and techniques that provide full transparency and agility across the entire supply chain — from multi-year strategic planning to last-mile delivery. Renowned global brands trust us to provide the agility and predictability needed to navigate today's volatility and disruption.

Accelerating customer demands, technology advancements, and disruptions call for a new approach to supply chain management. Maestro is the only platform that enables supply chain orchestration across planning and execution to keep supply chains instantly and continuously in sync.

**Contact us today to discuss how we can assist you on your path to a more collaborative, synchronized supply chain.**

[Contact us](#)

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