Unchain the supply chain

How to break free from supply chain disruptions using integrated AI planning

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To meet the challenge of today's disruptions and bottlenecks, organizations would be wise to break free from traditional supply chain management and adopt integrated artificial intelligence (AI) planning. Imagine being able to leverage analytics, digital tools, and AI capabilities to capture, analyze, and share information across the supply chain. Such a transformative approach would provide a more accurate understanding of the market and make suppliers more accountable, all while enhancing internal performance and cost-efficiency.

AI in the supply chain

From rebels attacking container ships in the Red Sea and lower water levels in the Panama Canal to bottlenecks at ports and terminals, shipment delays and disruptions have become the new normal. Carrying more inventory and contracting with Tier 3 suppliers are not permanent answers.

Instead, supply managers are turning to AI-enabled supply chain planning that includes countermeasures for various potential risk events. As the supply chain matures, more disruptions may occur, in turn requiring more AI-driven execution that can anticipate and lead to better responses faster. The path often progresses from reactive and siloed to process managed to highly collaborative and fully integrated. Once full integration of planning and AI is reached, decision-making is accelerated with more supporting insights and recommendations.

Cognitive demand planning: The right products delivered at the right time and place

Cognitive demand planning utilizes insights across multiple demand streams to generate a consensus picture of future demand, driving high forecast accuracy and measurable business value. It addresses the weaknesses in dominant time-series and regression-based techniques by combining advanced forecasting and demand planning techniques with segmentation to drive agility.

Cognitive demand planning leverages AI and machine learning (ML) to refine rules based on performance, as well as elevate identifying risks and opportunities, all of which improves the consensus planning process. Having the right products delivered at the right time and place boosts gross margins, increases revenue, and reduces operational costs.

Retooling your supply chain with integrated AI and supported by cognitive demand planning is essential for overcoming risks and issues. It also gives your supply chain more visibility and greater resilience.

AI-fueled decision-making drives real results

According to our analyses, faster event detection and scenario analysis speed up decision-making. And combining accelerated decision-making with faster execution improves service level[1] 400 basis points and increases gross margins by 5.5 percent.[2] Further, AI-enabled supply chains can expect a 35 percent increase in labor productivity; AI optimized scheduling applied to warehouse shifts has been shown to reduce warehouse and transportation worker attrition by 38 percent.[3]

When it comes to generative AI (GenAI) implementation, supply chains are already relatively far along. In 2023, a third of supply chain leaders experimented with GenAI. In 2024, 50 percent of supply chains report that they are shifting towards GenAI implementations.[4] Supply chain functions ideal for GenAI enablement include customer service (78 percent) and operations (66 percent).[5] AI can be applied to handling customer order exceptions, counting physical inventory, inspecting the condition of products, and auditing contracts.

A holistic supply chain management solution

A more strategically sound, holistic approach to supply chain management encompasses strategy, planning, and execution with an infusion of AI in every area, ultimately driving both visibility and resiliency.

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1 KPMG study

2 KPMG analysis of company data, 2021

3 Based on KPMG client experience

4 Gartner Generative AI 2024 Planning Survey, January. 2024

5 Generative AI Survey, KPMG LLP, June 2023; Gartner Generative AI 2024 Planning Survey, January 2024

Supply chain strategy

From origin to the point of consumption, strategy should be an organization's first consideration and leveraging AI can accelerate the process. Supply chain strategy includes:

1

AI and connected strategy

An AI-based connected strategy utilizes technology and data analytics to capture, analyze, and share information across the supply chain for greater visibility, better decision-making, and coordination. Leveraging digital capabilities as part of a connected strategy boosts operational productivity.

2

Network model analysis

A network model analysis determines the optimal configuration of facilities, distribution centers, and transportation routes to minimize costs and maximize efficiency. An AI tool like digital twins can facilitate simulating different models and how they react.

Integrated business planning

This fully integrated approach to business planning brings together finance and operations while relying on AI to exploit its functionality. The result is a clear decision focus, escalation paths, and strategic horizon. Integrated business planning includes:

Cognitive demand planning

Focuses on segmentation, forecasting, and consensus demand planning. By leveraging AI, cognitive demand planning engages various advanced predictive techniques, including leveraging internal and external data sets, as well as utilizing advanced statistical techniques and ML tasks, to improve forecast accuracy.

Supply planning

Enables organizations to proactively plan for the long term and address potential supply gaps while simultaneously equipping them to handle unexpected disruptions efficiently along with managing key constraints. Multiechelon inventory planning enables a strategic balance between service level, cost, and resiliency.
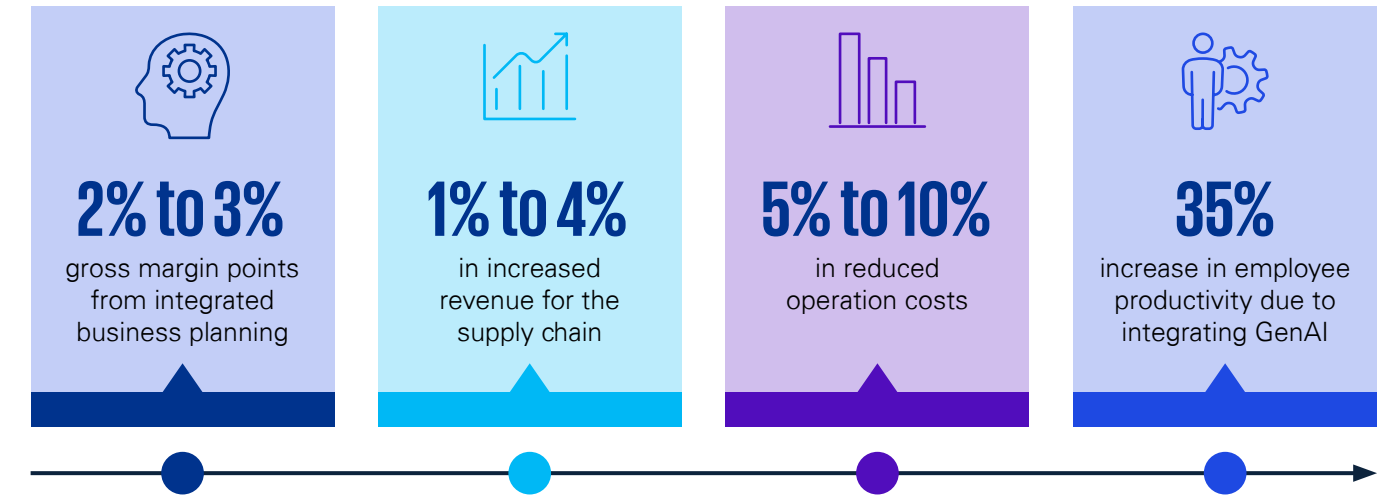
Collaboration

Collaboration comes in two forms: customer and suppliers. With customers, demand data is captured and customer forecasts are adjusted, among other tasks. For suppliers, there is an exchange of forecast requirements and supplier capacity commitments. An open dialogue to review performance is also a feature of supplier collaboration.

Integrated finance

Finance, as part of a highly collaborative and integrated planning relationship, enables the ability to generate financial scenarios to get agreed gross margin with advanced analytics and ML/AI insights incorporated.

Integrated AI planning delivers bottom-line results

2% to 3%
gross margin points from integrated business planning

1% to 4%
in increased revenue for the supply chain

5% to 10%
in reduced operation costs

35%
increase in employee productivity due to integrating GenAI

Roadblocks to unchaining the supply chain

As organizations seek to shift away from the status quo with supply chain management, challenges are inevitable. In our work with clients, six roadblocks tend to arise:

1

Lack of data readiness

Many organizations lack processes for data collection and centralization. There are also data quality issues such as accuracy, completeness, and consistency. Since AI-driven supply chain management relies heavily on data analysis, quality data is critical. Get started with a data readiness assessment to evaluate the current state and initiate a data cleanup.

2

Resistance to change

Improving supply chain management often requires significant changes to processes, systems, and organizational culture. It requires change management and significant investments of time, especially with implementing AI planning and execution across the enterprise. Issues can arise from employee resistance and lack of buy-in to inadequate training and poor communication. Clear communications, employee involvement, and enlisting champions can help address these issues head-on.

3

Unrealistic timing expectations

Transforming the supply chain can take years as everything needs to be carefully designed and implemented. Details include collaborations (customer, suppliers), demand planning, supply planning, and decision-making.

4

Untrained talent

AI-fueled supply chain management requires a diverse skill set, including technical, analytical, problem-solving, communication, and negotiation skills. Take the time to train or upskill supply chain talent for an AI-driven future.

5

Decision rights and escalation paths

It's easy to say everyone has input on decisions. It's more challenging to give someone the power to make decisions that everyone must accept. Without clear agreement on who gets to decide and when, there is delay and uncertainty that can lead to inertia. Escalation paths are also critical given the cross-functional nature of supply chain management and magnitude of issues and risks. When decisions and escalation paths are absent, fiefdoms can form that are detrimental to achieving goals.

6

Misaligned incentives

Integrated AI planning requires the coordination and collaboration of different departments and external partners. Misaligned incentives often slow or delay progress. For example, if finance and operations have conflicting incentives, then overall performance will be hindered with low team morale. With aligned incentives, there can be broad agreement on objectives, team cohesiveness, and balanced performance. When all departments are aligned on incentives with the goal of improving performance, it creates a culture of continuous learning and innovation.

Getting started with integrated AI planning

Integrated AI planning requires starting with a strong foundation that sets the table for alignment with strategy, enables process efficiency, provides standardization and consistency, and yet also offers scalability and flexibility because supply chain planning occurs with uncertainty.

The first and foremost foundational element is a target operating model. This blueprint or framework defines how an organization's operations should be structured and managed to achieve its strategic objectives. It outlines the desired future state of the organization's operations, including its people, process, and systems. Every company should have a target operating model.

Another building block is controls and policies for governing operations. Companies depend on them to maintain quality in everything from risk management to managing suppliers. It's the lack of controls and policies that can derail integrated AI planning. Publicizing policies for demand planning or inventory planning, for example, that includes when to revisit and adjust consensus demand planning rules or revise target inventory levels can be an effective way to improve collaboration. It's why controls and policies matter.

Data governance is critical to integrated AI planning applications. Developing robust scenarios requires accurate master data. Clean, quality data is ideal for AI and predictive analytics. Most companies are in the process of getting their data right or lessening their reliance on internal data. Companies that excel at change management are primed for integrated AI planning. They have a clearly defined vision and goals that are communicated to all stakeholders to ensure alignment and understanding. The company also has strong leadership that is crucial for driving change. For example, many stakeholders will need convincing to shift their thinking from short term to long term. Change champions who believe in the value of integrated AI planning can win over the wait-and-see crowd. Like any change management program, continuous monitoring and evaluation, along with celebrating successes, are essential for implementing integrated AI planning.

KPMG. Make the Difference.

Unchain your supply chain with KPMG integrated AI planning. With our established six-layer target operating model, we can provide accurate analysis and segmentation, along with thorough planning and a data assessment. We also engage algorithms to help optimize areas of operations. Our solutions are tailored to your needs, from improving inventory management and helping ensure regulatory compliance to reducing costs across the board. Together, we can make the difference in modernizing your supply chain operations.

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