Modern supply chains drive margin protection, operational excellence, and enhanced decisioning by utilizing AI-powered, cloud-based platforms. These platforms de-risk supply chains and enhance resilience, enabling better responses to disruption and demand volatility.

Key Considerations When Building a Modern Supply Chain

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Questions posed by: Argano

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Q. Why is a modern AI-powered supply chain important?

A. Over the past two decades, organizations in product-based industries, including energy, utilities, manufacturing, and retail, have embarked on digitization initiatives in response to technological shifts, regulatory changes, and evolving competitive dynamics. IDC's July 2025 *Future Enterprise Resiliency and Spending Survey* indicated that nearly 67% of them are mostly digital businesses. These organizations have implemented strategies geared toward integrating digital and AI technologies across processes, interactions, and value-creation streams. On the macroeconomic front, the survey also indicated that 73% of product-based companies believe that a recession is likely or very likely in the next 12 months. As organizations race toward advancing digital maturity in the current business environment, a resilient operational backbone is paramount.

To this end, a modern supply chain powered by AI and digital technologies helps organizations thrive amid ongoing disruption, complexity, and pricing pressure. Advanced solutions developed with technologies such as cloud, AI and analytics, Internet of Things, robotics, and industrial automation provide granular visibility and reduce the need for human intervention. The same IDC survey indicates that nearly three in five organizations in product-based industries introduced generative AI (GenAI) solutions into production or have embedded these capabilities across the company, including the supply chain vertical. Cutting-edge supply chain solutions that integrate these technologies offer seamless real-time data integration, advanced predictive analytics, and autonomous decision-making capabilities that empower organizations to optimize inventory and strike a balance between cost, service, and resilience. This ensures that organizations have modern supply chains that can drive operational responsiveness, provide accurate forecasting, enable planning agility to address possible futures, and optimize business performance.

Q. How are organizations transforming their supply chain?

A. Organizations have utilized modern supply chains in many ways to improve their business. Examples include the use of RFID for inventory tracking, robotics for autonomous logistics, digital solutions for data-driven planning, and blockchain for operational transparency. While several technological components are vital to the successful implementation of a modern supply chain, IDC's May 2025 *Supply Chain Survey* indicated that the top 3 critical technologies for organizations today are supply chain SaaS/cloud applications, AI/ML, and GenAI. Cloud-based platforms provide a foundation for incorporating AI into supply chains, offering real-time visibility, unified data that cuts across previously disparate silos, and seamless integration with an ecosystem of external partners, including application and data providers leveraging APIs. Through these characteristics, digital supply chain platforms offer a significant leap over their traditional counterparts, which tend to face limitations because of their relative inflexibility. They enable rapid scaling and enterprise-grade capabilities such as cybersecurity and advanced analytics. These platforms are flexible and support a range of AI applications, driving outcomes such as operational resilience and supply chain efficiency.

These platforms make an end-to-end impact on the supply chain. Modern logistics solutions leverage real-time tracking, inventory monitoring, and route optimization to reduce delays and improve delivery reliability. Automated order processing and inventory management minimize human errors, while cloud-based collaboration and mobility foster agility. Businesses achieve cost-effective scalability by optimizing IT investments and quickly integrating new technologies. Optimized and secure supply chain solutions can help achieve significant improvements in order fulfillment, forecast accuracy, delivery rates, and inventory management, along with advancements in sustainability and regulatory compliance.

Q. What best practices and strategies should organizations follow to maximize value from supply chain modernization?

A. To remain competitive in the next three to five years, organizations must prioritize integrated platforms, advanced analytics, and ecosystem collaboration. By 2028, IDC forecasts that 80% of global supply chain entities will migrate to cloud solutions, boosting inventory velocity by 5% and empowering small and medium-sized businesses to rival larger players. Furthermore, 70% of these entities will deploy LLM-powered platforms to simulate and predict risks, enhancing resilience and enabling proactive risk management. Unlocking value in manufacturing, distribution, and wholesale requires dismantling silos, automating repetitive work, and fostering holistic decision-making. Careful planning and utilization of a phased implementation road map are critical to laying a strong foundation for digital solutions. Effective change management and collaboration across the ecosystem are essential to ensuring successful adoption and scale with these platforms.

Buyers across the value chain play a critical role in making the most of modernization initiatives. Operations leaders in manufacturing should concentrate on unified control towers and digital twins to synchronize production, inventory, and logistics, improving throughput and reducing downtime. Supply chain executives must champion integrated business planning and execution platforms that leverage AI and cloud solutions to break down silos and enable end-to-end visibility, which is crucial for managing demand volatility and supplier risk. Finance leaders should seek platforms that deliver real-time analytics and scenario modeling, supporting dynamic trade-offs between cost, service, and resilience. IT

and transformation owners should modernize legacy systems, prioritize cloud migration, and ensure robust data governance for secure, scalable operations. Similarly, business unit leaders should drive holistic execution strategies that align warehousing, logistics, and planning to reduce latency and improve responsiveness.

Q. What measurable outcomes are product-centric companies looking to achieve?

A. Leading product-centric organizations recognize that supply chain excellence requires the integration of operational metrics with customer-focused measures. Alongside traditional KPIs such as on-time delivery, perfect order rates, and inventory turnover, companies now systematically measure customer satisfaction and experience outcomes. This integrated measurement approach ensures that operational performance directly translates to customer loyalty, repeat business, and long-term revenue growth. IDC's February 2025 *Future Enterprise Resiliency and Spending Survey* found that achieving operational efficiencies is the predominant goal driving AI-infused application efforts, with 41% of respondents across product-based industries highlighting its importance. Improving competitive differentiation and driving new revenue growth also feature among the most important goals.

Driven by data, modern supply chains are yielding tangible enhancements in operational efficiency, margin preservation, and decision-making across the manufacturing and distribution sectors. In the context of operational efficiency, tracking forecast accuracy improves inventory positioning, while measuring inventory turnover and order fulfillment rates reduces stock-outs. Other measures of efficiency include error rate reduction with AI-driven picking and automation, faster detection and response with real-time data analytics, and inventory cost cutting with real-time adjustment of inventory levels. Automated value-based pricing using data-driven techniques, waste reduction, and process optimization help companies safeguard their profits and enable more proactive price management. Visibility across the supply chain, predictive analytics, and AI-enabled decision-making drive transparency and faster, more informed decision-making. Modern digital platforms and analytics help firms target, quantify, and continuously improve their supply chain performance, translating operational progress directly into business value.

Q. How can organizations solve business and operational challenges as they modernize their supply chain?

A. Legacy system integration remains one of the most persistent obstacles in supply chain digitalization. Many organizations operate on outdated ERP, logistics, or warehouse management systems that lack compatibility with modern digital platforms. The fusion of digital platforms and AI presents a clear advantage in building a modern, resilient supply chain that addresses emerging needs. These platforms provide advanced agentic capabilities that open promising paths to expedite outcome achievement. While exploring agentic AI capabilities within supply chain ERP components such as procure-to-pay, inventory, and order management, nearly 30% of organizations intend to use embedded AI from an applications provider, according to IDC's May 2025 *Future Enterprise Resiliency and Spending* Survey*, Wave 4*. Approximately 36% prefer AI capabilities developed by application providers.

According to IDC, these platforms have proven potential to drive value realization across a company's supply chain. However, digital supply chain transformation requires substantial capital for infrastructure, software, talent acquisition, and ongoing operational expenses. To make the most of precious capital, organizations should consider ways to de-risk modernization initiatives. One way to achieve this is by working with a partner that has expertise across a broad range of engagements, integrating cloud, AI, and other innovative technologies. The partner's ability to deliver repeatable results is also important. IDC's August 2025 *Worldwide Survey on ITC/SI Professional Services* indicates that more than 80% of buyers in product-based companies are turning to external service providers for systems integration services. Collaborating with a partner reduces the chances of costly delays or failures while improving the predictability of outcomes.

About the Analysts

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Jason Bremner is research vice president for IDC's IT Consulting and Systems Integration Strategies program, providing research insights and thought leadership on the key issues and trends affecting the IT consulting and systems integration services markets globally. His core research includes analyzing customer demand and vendor offerings for IT consulting and systems integration services, and the services ecosystems for leading application software and infrastructure solution providers.

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