



6 Technologies Shaping the Modern Supply Chain

With endless tools available on the market, these six systems remain central to running warehouses, transportation and decision-making.

Supply chain solutions come in all different shapes and sizes. In fact, they're as diverse and dynamic as the supply chains they support. There are legacy solutions that continue to do their jobs after 20+ years, modern systems that integrate well with others to make up more all-encompassing systems, and "lighter" applications that are focused on solving one very specific problem very well. The choices are literally endless thanks to the proliferation of solution developers that want to help organizations better manage their end-to-end networks.

Sorting through all of the options isn't easy, but there are some core platforms that every company should either be using or at least considering. Here are six core technologies to focus on as you shape your supply chain strategy.

1. Warehouse management systems (WMS). Because most supply chain operations need a distribution point, the systems that run warehouse and distribution centers (DCs) play a crucial role in the overall operation. In most cases, the core platform is a WMS, which manages inventory, directs workflow and coordinates day-to-day activities inside the

four walls. A WES adds real-time task orchestration to keep labor, equipment and orders flowing at the right pace. A WCS manages the automation layer by directing conveyors, sorters and other material handling equipment. Together, these systems form the basic technology layer that keeps warehouse operations organized and running on schedule.

2. Transportation management systems (TMS). Once products leave the warehouse, a TMS becomes the core tool for planning, routing and executing shipments. It helps teams select carriers, build loads, manage rates and track freight as it moves through the network, giving operators clearer insight into schedules and costs. Newer TMS platforms include functionalities like real-time tracking, automated tendering, analytics and even some artificial intelligence (AI), depending on the specific vendor.

3. Enterprise resource planning platforms (ERP). These multifaceted systems tie finance, procurement, inventory, sales, logistics and other departments together under one system that shares the same data. Most of them are based in the cloud, although nearly all early iterations of ERP

were monolithic, on-premises versions of their leaner, modern selves. ERPs centralize core operations, standardize processes and give teams a consistent view of what's happening across the operation.

4. Secondary but essential tools. Once the core systems above are covered, the list of "must-haves" becomes more fragmented. Yard management systems (YMS) coordinate the movement of trailers between the gate and the dock. Labor management systems (LMS) serve as the modern successor to engineered labor standards, helping teams measure productivity and plan staffing. Global trade management systems (GTM) handle classification, documentation and compliance for cross-border shipments. Inside the warehouse, distributed order management (DOM) determines where to source and fulfill orders across multiple sites, and order tracking and management tools (OTM) provide status updates, exception alerts and basic visibility into outbound activity.

5. Predictive analytics platforms. Data is the new oil for supply chain operators that need reliable information to make quick decisions and respond to shifting conditions. Predictive analytics draws on historical patterns, demand signals and AI models to forecast what's likely to happen next. According to [Turvo](#), these tools help companies forecast demand more accurately, optimize transportation routes and identify inefficiencies earlier in the process. They also strengthen decisions around procurement and replenishment, which helps reduce stockouts and excess inventory. "By analyzing buying trends, seasonality and market shifts, predictive analytics ensures that companies can adjust procurement and distribution strategies accordingly," Turvo adds. "This results in better resource planning, reduced excess inventory and optimized warehouse storage."

6. Automation, robotics and AI. As the ongoing warehouse labor shortage, the need to do more with less and the overall push to digitalize continue to take hold, automation and robotics are playing a larger role in the typical fulfillment facility. According to [Global Market Insights](#), the total market size is expected to exceed \$115 billion by 2034—up from \$26.5 billion in 2024. Companies are evaluating and investing in systems like autonomous mobile robots (AMRs), automated storage and retrieval systems (AS/RS) and other robotics designed to handle repetitive or time-sensitive tasks. The research firm says organizations are also putting more capital into automation and artificial intelligence (AI) to improve efficiency, control costs and speed up order fulfillment.