

and connect with partners to see across the network. The second, *holistic decision-making*, is the ability to harness and harmonize traditional and new data to continuously learn and predict. And the third, *intelligent automation*, is the ability to use the right human or machine for the task at hand while automating digital processes where beneficial.

The horizontal partnerships forming around ports show how a connected community can improve visibility and efficiency. In ports such as Hamburg and Rotterdam, integrated platforms exchange critical port information—including ship arrival and departure times—to participating ports, shipping lines, and marine terminals coordinating drayage. Powered by cloud, these platforms can enable ports to orchestrate the network with real-time data exchange, optimizing ship course and speed, vessel berthing, ship offloading, and responses to schedule changes. Outside ports, digital freight platforms that match cargo to available capacity are expanding beyond their historical focus on spot-trucking to different points of the value chain, from air and ocean to rail and B2B freight.

Early adopters of holistic decision-making are using a mix of new data sources—from connected assets, cargo, and warehouses—to increase their agility to react to changing network conditions with dynamic decisions. In some cases, companies are also harmonizing these new data streams with transportation management, inventory management, and other supply chain functions. For instance, some ocean shipping giants command fleets of hundreds of thousands of IoT-enabled cold containers, transmitting data on temperature, location, and refrigeration power supply to the cloud, helping to automate oversight, exception alerts, and quality control processes at ports.¹

Evidence of maturing intelligent automation can also now be found at every step in the supply chain. Some ports already feature an entirely robotic ship offloading process, while Flytrex, an on-demand drone delivery startup, automates last-mile package delivery in Iceland.² Capturing automation's full potential will likely require rethinking entire logistics systems to take full advantage of a constant flow, including an evolution away from the fixed “collect in the evening and deliver during the morning” approach toward a fluid system of continuous movement and supply.

For global movers, building a solid foundation around these pillars can be crucial. First steps toward establishing capabilities in each pillar can include initiatives to modernize applications, implement cloud solutions, secure needed talent, and mitigate cyber risk. As a company—and the ecosystem as a whole—becomes more advanced, leaders may consider technologies such as artificial intelligence, IoT, blockchain, and robotics to enhance their capabilities. While transformation is a long journey, even incremental digitization of logistics operations can deliver plenty of benefits. ●

**To learn more, read *How are global shippers evolving to meet tomorrow's demand?*
The future of the movement of goods on www.deloitte.com/insights.**

How are global shippers evolving to meet tomorrow's demand?

page 122

1. Chi Le, "Maersk-reinventing the shipping industry using IoT and blockchain," HBS Digital Initiative, November 15, 2017.
2. BBC, "Iceland expands food delivery by drone in Reykjavik," June 13, 2018.

