

Unlock New Value Across Supply Chain Operations

Intel® AI is ready *right now*, optimized for you, and flexible for the future of supply chain management.

The Market Imperative

Global supply chains are under pressure. Pandemic-driven socioeconomic demand shifts in global supply reliability and dynamic consumer shopping behaviors are leading to logistics challenges across key stages of supply chain operations. Rising inflation puts even more pressure on all players to do more with less.

For example, manufacturers facing long lead times for raw materials and shortages of critical components are forced into production slowdowns. Warehouse and transportation operators used to relying on time-consuming and people-intensive processes for pick, pack, and ship are slowing down the flow of goods to reduce shipping errors. The changing expectations of consumers are putting new pressures on retailers—both online and in the store—for more personalization, with no increased cost.

All stages of the supply and demand chain are also struggling with huge compression in the labor market. There are simply not enough human resources to fill the need. Coupled with increased government regulations and escalating healthcare costs, employers are under increased pressure to find new ways of assuring worker safety and regulatory compliance, all while keeping processes efficient and productive.

How do organizations maximize their supply chain agility, flexibility, and resiliency to stay ahead of these challenges—and the competition?

Business decision-makers are discovering how artificial intelligence (AI) and computer vision-powered solutions can make transformation possible. AI at the edge is helping organizations extract the data they need to successfully manage the growing complexities of multistage supply chains and unlock new value across their operations.

“Through 2024, 50% of supply chain organizations will invest in applications that support artificial intelligence & advanced analytics capabilities.”

– Gartner Predicts the Future of Supply Chain Technology, 2021

Edge AI Optimizes Supply Chain Operations

AI solutions are used across these venues, enabling applications ranging from cross-selling to reducing food waste. Here are just a few examples at work today:

- Manufacturers gain insight across their downstream and upstream supply chain operations, ensuring appropriate levels of raw materials to maintain production while implementing sustainable factory practices.
- Shop floor layout and moving equipment are monitored to reduce accidents and improve worker safety.
- Warehouse operators incorporate automated pick validation systems to improve shipment accuracy.
- Loading docks turn trucks quicker by optimizing load/unload priority and document exchange.
- Distributors increase product visibility across global locations, maximizing storage efficiency and business-to-business stock availability.
- Retailers increase turns and reduce stock-outs with near real-time monitoring of shelf status and business-to-business integration to key suppliers.
- Transportation and logistics providers increase throughput and customer satisfaction by efficiently managing parcel volumes, with near real-time track and trace, plus compliance to environmental transport requirements.
- Distribution operators reduce last mile delivery accidents with in-vehicle computing, improving safety and increasing on-time service while reducing maintenance costs.

Key Technology Imperatives

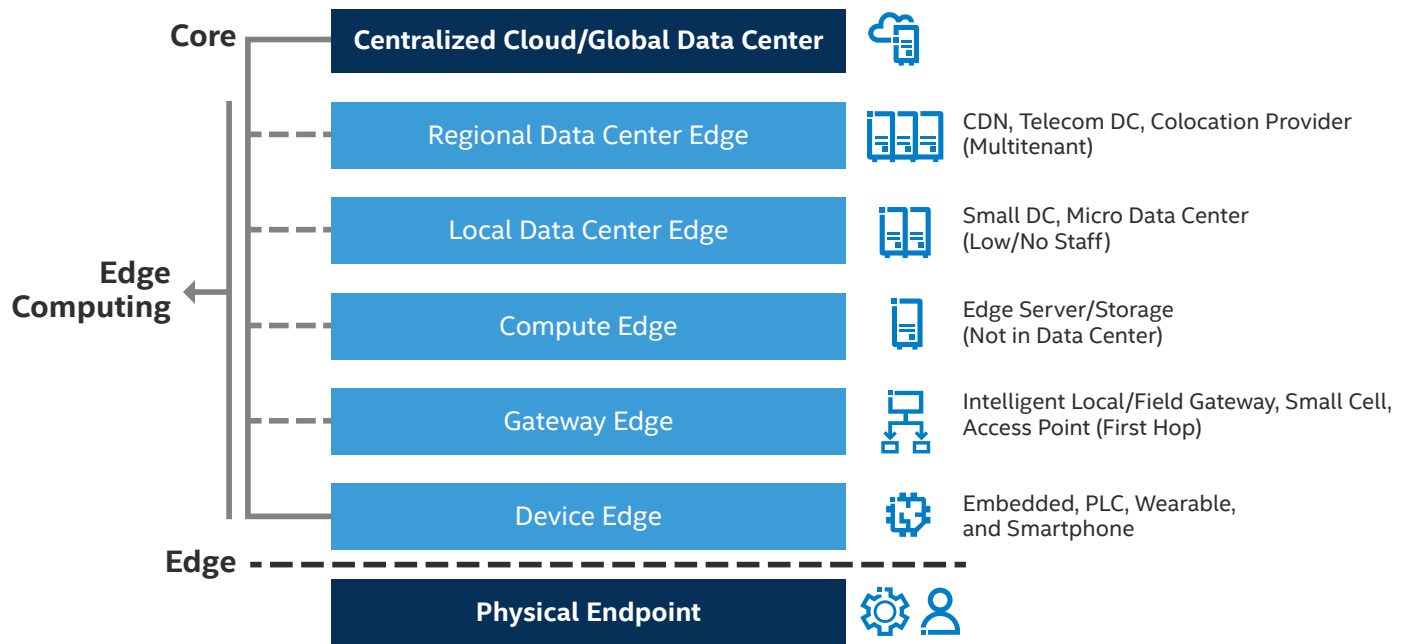
With flexible AI and computer vision-enabled platforms, a fully optimized supply chain workflow—prepared to flex into the future—is more attainable than ever before. AI at the edge empowers organizations to take advantage of data generated from multiple endpoints, supporting new approaches to traditional problems like dock efficiency, worker safety, regulation compliance, supplier performance, and beyond.

The most successful deployments for AI-enabled solutions are built from Edge to Cloud. Well-thought-out solutions are:

- 1. Endpoint Connected:** It's all about the data gathered at the edge. This includes video from cameras but also contextual data from facility sensors or data tags. The more edge information, the richer analytics can be applied.
- 2. Edge Compute Accelerated:** Processing data close to the source speeds decisions. Compute designed for the environments specific to where decision-makers reside is critical to success. Ensuring systems can operate in harsh environments, while creating mobile interactive experiences, accelerates adoption.
- 3. Network Optimized:** From the factory to the warehouse to the customer, reliable connectivity is essential for monitoring goods in transport as they leave the point of origin and arrive at their destination. Nonstop networking means transparent handoff from wired to wireless—be it Ethernet, Wi-Fi, or 5G—critical to the real-time tracking and management companies need.
- 4. Cloud Connected:** Data from the edge to the core to the cloud make real-time status updates accessible and continuous analytics possible. Customers want their choice of on-premises, cloud service provider, or a hybrid model that fits their operational and I.T. infrastructure.

AI-enabled solution stacks take advantage of the open development methodologies that make integrated systems powerful. APIs expose data services for consumption throughout the enterprise. Secure network connectivity keeps proprietary information out of the hands of bad actors. Container-based edge and model management ensure agility while reducing upkeep cost. And integrated CI/CD development methodologies ensure long-term solution viability.

Edge to Cloud AI Architecture



For latency-sensitive applications, edge processing is key. Large-scale regional, global, and distributed applications require cloud processing.

Ready to Scale

Partners Cherry Pro, KoiReader, and Siena Analytics deliver AI Edge to Cloud solutions that deliver on the technical thresholds and best practices that make them ready for scale. Each of these solutions leverage the Intel® Distribution of OpenVINO™ toolkit and Intel® oneAPI technical stack, enabling high-performance distributed systems.

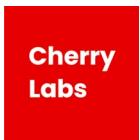


Cherry Pro

With Cherry Pro, manufacturers can use AI-powered video analytics to improve operations and employee safety. The company's platform takes raw video streams and using AI and machine learning can automatically identify complex human behavior. This results in actionable insights, including alerts, dashboards, and other customizable analytics that drive better business decisions.

With Cherry Pro, manufacturers, for example, benefit from:

- Real-time video analytics and alerts
- No-code protocol construction and training
- Predictive analytics and anomaly detection





KoiReader

KoiReader is improving operational efficiency across the entire value chain with its AIoT-powered hyperautomation platform for logistics and the supply chain. The company leverages its proprietary Autonomous OCR and machine vision technology from edge to cloud to provide manufacturers with an efficient and accurate supply chain.

With KoiReader, warehouse operators benefit from:

- Inventory management and tracking
- Vision-powered automation and visibility
- Image/object recognition and classification
- Deep logistics and supply chain expertise



Siena Analytics

Siena Analytics is empowering customers to streamline workflows and cut maintenance costs through faster shipping, reduced equipment downtime, and automated quality control. The AI-powered Siena Insights solution enables customers to capture images in near-real time as packages move through scanning tunnels. And with data from across the supply chain, dashboards provide operational visibility anywhere, anytime.

With Siena Analytics, transportation providers benefit from:

- Real-time visual inspection
- AI reporting and anomaly detection alerts
- An end-to-end no-code solution
- Predictive maintenance and analytics



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