

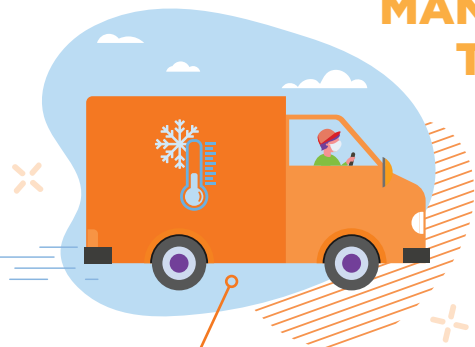


MANUFACTURING & WAREHOUSE

DISCOVER OPPORTUNITY

Forbes reports that COVID-19 accelerated eCommerce growth by four to six years, and another recent statistic shows total online spending in May 2020 was up 77 percent year over year. Warehouse and distribution centers certainly aren't new to eCommerce, but that doesn't mean they aren't struggling to keep pace with this rapid uptick in demand. Improve your efficiency and speed through technologies like AI, robotics, and more. In addition, new tech solutions are needed to effectively manage performance in manufacturing—while at the same time ensuring physical distancing and remote-work policies remain intact.

MANUFACTURING AND WAREHOUSE TRENDS AND OPPORTUNITIES



Cold-chain supply management

Managing the cold chain requires keeping a product in a specified temperature range until it reaches its destination. Sensors and monitoring systems provide data that confirms products have met the temperature criteria throughout the entire delivery process. The increased demand for perishable products and the fast-delivery requirements of the eCommerce-based food/beverage delivery market created a significant boost in cold-chain operations. The global, cold-chain market that was valued at \$210.49B in 2020 is expected to grow at a CAGR of almost 15 percent from 2021 to 2028. Trade liberalization, government efforts to reduce food waste, and the expansion of retail chains by multinational companies are expected to boost growth as well.

Source: www.grandviewresearch.com



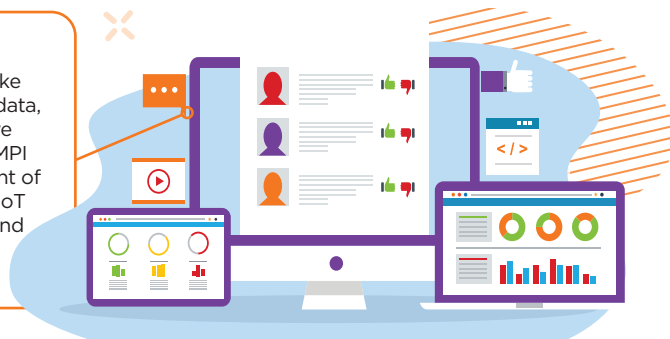
eCommerce and omni-channel distribution

The eCommerce boom is here to stay, and so is omni-channel distribution—which involves responding to demand, letting customers purchase from anywhere and arrange delivery wherever they choose, and returning products (reverse logistics). For the first quarter of 2021, US eCommerce sales grew 39 percent year-over-year, to \$199B. Adobe (Digital Economy Index) expects US eCommerce spending this year to total between \$850 and \$930B—and to top \$1T in 2022.

Source: [Forbes](https://www.forbes.com)

IoT and AI

IoT provides the info needed to make strategic decisions using real-time data, which can help reduce cost, improve efficiency, and enhance safety. An MPI Group study showed that 34 percent of manufacturers plan to incorporate IoT technologies into their processes, and 32 percent plan to embed it into their products.



Micro-fulfillment centers (MFCs)

Micro-fulfillment centers—a highly recommended eCommerce strategy—are an effective way to meet rising volume, the changing geographical nature of demand, and the growing desire for same-day delivery. Some experts predict one MFC for every tenth of the 40K US grocery stores by 2030. All those MFCs will need more label printers, scanners, and other devices to run efficiently. And deploying the right inventory-management software and a compact storage device makes it possible—and even cost-effective—to transform any storeroom into an MFC.

Source: www.sdexec.com

SOLUTIONS THAT SUPPORT THESE TRENDS



COLLABORATION

Create a universal communications platform from fixed sites, mobile devices, and/or factory/field equipment. It's critical to managing a comprehensive logistics program.



CONNECTIVITY

Support all these solutions with high-speed bandwidth. Can include wireless infrastructure.



DESKTOP BARCODE PRINTERS

Provide a great solution for areas exposed to dust, dirt, and/or heavy usage.



IoT and AI

Deploy automation through robotics and AI to increase efficiency by eliminating human errors in picking, packing, and shipping.



CYBERSECURITY

Ensure sensitive data—and access to resources and utilities—are protected.



PHYSICAL SECURITY

Restrict access to secure areas, deploy facial recognition, and identify threats. Ensure social distancing, occupancy, and PPE standards are implemented and followed.



MEDIA (PAPER, LABELS)

Use the right products, so printers function accurately. Extend printhead life. Applications chosen determine media required.



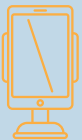
MOBILE BARCODE SCANNERS

Gather data needed for warehouse management systems, reduce cost, and provide better control of operations.



SERVICES

See more adoption of technology by removing the complexity of implementation and ongoing support through the right services.



VEHICLE MOUNTS

Give the technology a place to sit while workers do their jobs. Help prevent damage to devices, and increase worker productivity.



RFID READERS AND TAGS

Manage when tagged items arrive or leave. Place at entrances and exits to allow real-time inventory tracking.



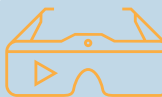
MOBILE PRINTERS

Improve the accuracy and efficiency of receiving, picking, packaging, and shipping. Eliminate the time workers need to get to printers in a fixed location.



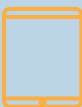
NETWORKING

Update the network on which all of the data travels.



WEARABLES

- **Smart glasses** – Provide a hands-free workflow that includes voice and scanning for picking.
- **Ring scanners** – Allow for hands-free picking and scanning, and use in multiple-device solutions.
- **Voice headsets** – Improve safety through voice commands for picking, receiving, replenishment, and returns.



RUGGED TABLETS

Allow workers to be mobile, so they don't need to use a fixed, desktop system. Mount on forklifts, built to handle vibrations, and sealed against dust/water.