omniQ

AI-Driven and Automated Logistics

Solutions for Real-time Transport and Supply Chain Visibility

ZEBRA

A Fully Realized Vision for Better Logistics

Imagine running a 3PL warehouse and knowing every truck that's on its way to your facility, what each truck contains, where it should be docked, which goods need to be unloaded, and which goods need to be cross-docked, placed in cold storage, or sent to specific receiving and storage areas.

That's the idea behind omniQ's AI-driven transportation, logistics, and warehousing technologies. Using the latest innovations in machine vision, traceability, and automation, omniQ solutions provide end-to-end visibility into everything that's moving through your logistics and supply chain operations. They also deliver real-time insights and help automate your logistics and warehousing processes, so you can orchestrate seamless, efficient and cost-effective operations at every step.

In this quick overview, we'll introduce you to omniQ's AI-driven vision for better logistics, and we'll show you how this smart and fully realized approach is already helping many warehouses optimize their workflows, supercharge their efficiency, and maximize their bottom-line.

The AI-Driven Logistics Workflow
A Transportation and Logistics Example

The best way to understand AI-driven logistics is to consider a typical workflow involving inbound transport of goods to a terminal or warehouse for docking, unloading and storage, or for cross-docking and transfer.

Here's how the process works with OmniQ software and technologies for automation, tracking and real-time AI-driven workflows and intelligence:

1
An outbound truck is loaded with RFID-tagged goods. OmniQ software and RFID dock-door readers automatically identify and track every pallet and item as it's loaded.

2
OmniQ software orchestrates and coordinates the loading process to ensure the correct goods are loaded on the truck with minimal or no shipped air, with optional photos to verify pre-transport conditions.

3
OmniQ mobile software scans the truck's license plate to match the vehicle with its contents and transmit outbound shipment data to logistics or warehouse systems.

4
During transit, omniQ software provides real-time automated routing, navigation, inventory tracking, and status updates, allowing stakeholders to track, monitor and receive automatic updates of any good or shipment.

5
As the truck arrives at the destination warehouse or terminal, an omniQ camera scans the truck's license plate and sends info about the vehicle and its contents to the facility's warehouse or logistics management system.

6
OmniQ software works together with the warehouse or logistics management system to instantly and automatically assign the truck to the right dock door.
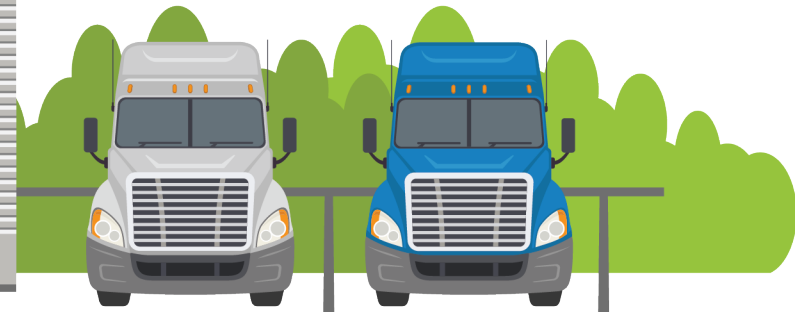
7
Dock door assignments are based on the truck's contents, available docks, and any special cross-docking, unloading, security and storage requirements.

8
OmniQ software automatically orchestrates the process to ensure maximum efficiency and the right workflows for the right shipments and goods.

WAREHOUSE

5 **6** **7** **8**

9
Automated notifications are sent to managers and personnel, notifying them of the inbound truck, its contents, and any unloading, cross-docking and storage requirements.

10
The driver receives a notification and real-time navigation to guide them to the correct dock door, and the driver pulls up to the correct dock.

11
As goods are unloaded from the truck, RFID readers at the dock door automatically detect and identify everything that's coming off the truck, and omniQ software tells the driver and on-site personnel which pallet goes to which receiving or storage area or to which cross-dock.

12
Pallets or items that are bound for put-away and storage are automatically assigned to the correct storage area, right down to the aisle and bin, and they're directed to the right personnel through omniQ's mobile software running.

13
Pallets or items bound for cross-docking or transfer are automatically assigned to the correct docks and trucks, with omniQ software orchestrating and directing each process with real-time notifications and digital guidance to ensure safe and efficient handling.

14
Personnel use RFID-enabled mobile computers to manage goods and workflows in real time, and they can wirelessly read and verify pallet or item tags to ensure accuracy at every step.

15
RFID-enabled robots can automate the process further, transporting goods to the correct storage locations using AI intelligence and navigation. Personnel can then work together with robots to unload and store goods in the right locations.

16
Personnel or RFID-enabled robots can also walk or travel warehouse aisles to wirelessly and remotely take inventory at any time.

17
Picking, packing, and staging processes can be similarly automated and streamlined with the same AI-driven software, RFID tracking, and vision technologies.

Technologies That Make It Possible

OmniQ Software

OmniQ software applications integrate with warehouse, freight, transportation, and logistics systems to put real-time logistics data and information at your fingertips and to automate workflows for better efficiency.

OmniQ apps are accessible via desktop and mobile devices and use built-in RFID reading and barcode scanning technology to automatically identify, locate and track goods in real time as they move through your supply chain.

Apps are built with a simple and intuitive interface as well as digital functionality and automation that fits each workflow in your logistics processes.

Solutions are also customizable and offer seamless interoperability with your existing systems and platforms, such as warehouse management systems (WMS), enterprise resource planning (ERP), and third-party logistics (3PL) software.

OmniQ Machine Vision

OmniQ machine vision sensors and cameras extend tracking and automation capabilities into the visual sphere. They leverage real-time imaging and sensing to automatically and accurately identify vehicles and assets, enabling more efficient and intelligent workflows with no manual tracking required.

Zebra RFID Solutions

Zebra RFID printers, tags and readers allow pallets, individual goods and other supply chain assets to be tagged, identified, located and tracked wirelessly and remotely, without manual barcode scans or needing line-of-sight to a barcode.

Entire truckloads or even warehouses of pallets, goods and items can be tracked as they move through key logistics processes, all with digital accuracy and real-time locating to within a few feet.

Zebra RFID readers are available in a number of types and form factors, from dock-door RFID readers to handheld RFID readers and RFID sleds that fit with existing touch mobile computing devices.

Zebra Mobile Computers

OmniQ software is optimized for use with Windows and Android mobile computing devices, including rugged industrial tablets, handheld mobile computers, and touch mobile computers from Zebra Technologies.

Zebra's devices are top-recommended for their extremely fast and reliable performance and their cost-saving durability in the harshest environments and toughest use cases, including decades of proven capabilities in transportation, logistics and warehousing.

Different Zebra device types and form factors are available to fit each specific workflow as needed, from touch mobile devices for drivers to rugged handheld RFID readers for warehouse workers and rugged tablets for logistics managers.
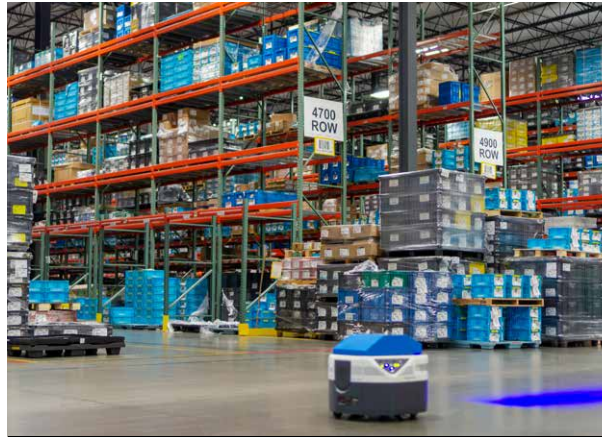
Zebra Wearable Technologies

OmniQ AI-driven logistics workflows can be further streamlined and automated through the use of Zebra wearable technologies, including wearable mobile computers, ring-style finger-worn barcode scanners, headsets, and head-up displays.

These devices enable hands-free and highly efficient warehouse workflows, allowing personnel to access cross-docking, put-away, picking and other instructions from a wearable mobile device that provides audio and visual cues to direct each process.

OmniQ software and Zebra wearable technologies work together to ensure each process is directed, performed and validated as quickly and accurately as possible, along the most efficient pathways, with RFID reads or barcode scans to verify the right goods are moved, retrieved, stored and processed at every step.

Zebra Fetch Robots

Zebra's Fetch robots are one of the latest innovations in warehousing and logistics, allowing workers and robots to work side-by-side in cooperation to boost efficiency and reduce the burden on warehouse and terminal personnel.

Fetch robots are available in a number of different configurations and allow goods to be loaded and transported to correct locations with AI-driven and automated navigation, built-in visual and proximity sensors to ensure safe travel, and on-board tablet devices to access software apps to help orchestrate and verify each correct task and process.

Zebra Temperature Sensors

As a global leader in automated tracking, locating and sensing technologies, Zebra has extended its expertise into the realm of temperature monitoring and sensing, which has become increasingly important for transportation and logistics processes requiring cold storage or other specialized and controlled conditions.

Zebra's portfolio of environmental solutions includes electronic sensors, ready-to-use and printable heat, freeze, and temperature indicators, and Temptime performance package qualification (PPQ) testing.

Zebra's solutions allow temperatures to be detected and monitored in real time, during transit and at rest. Working together with OmniQ software, Zebra temperature sensors and tracking technologies enable end-to-end traceability of virtually any temperature-sensitive product or material, with continuous sensing and digital tracking to ensure proper environmental conditions, safety, and regulatory compliance.

OmniQ's T&L Applications and Capabilities

Vehicle Loading/Unloading

OmniQ software works together with Zebra RFID, tracking and vision sensors to help you optimize every instance of loading and loading, ensuring the right goods make it on the right truck, at the right time, as efficiently as possible.

OmniQ's loading and loading software helps direct and coordinate each truck load, providing your managers and personnel with automated guidance and insights to help ensure a fast, safe and efficient process at every step. With Zebra RFID readers and barcode scanning, you can also read and scan every pallet or item to verify correct shipments and ensure complete accuracy.

With an AI-driven and automated approach, you can spend less time loading and unloading, ship less air, and get more out of your fleet while delivering superior transportation and logistics performance for you and your customers.

Route Planning and Management

OmniQ route-planning solutions help you plan the most optimal and fuel-efficient routes for every truckload and shipment, reducing the number of trucks needed and the number of miles traveled, which saves on fuel and maintenance costs. OmniQ's route analytics help you further optimize your operations over time, using AI-driven analysis and reports to continuously learn from trends, patterns, and changing requirements and improve your routing and performance.

OmniQ software also helps you monitor your fleet in real time, to ensure the trucks in your fleet are traveling over the right roads with the right products at the right times.

Route Execution

Once routes have been determined, trucks assigned, and stops ordered, omniQ's advanced driving optimization software tells your driver which route is best for each stop. It accounts for route restrictions, truck size, detours, and continuously changing traffic conditions in real time, so your drivers are always directed along the quickest and safest routes, with minimal surprises or delays.

In-Transit Visibility

OmniQ software lets you view the real-time GPS locations of your entire fleet and even the goods and containers inside your trucks. You can see the real-time status and progress of every shipment, so you can ensure that fleet and driver execution match your plans.

Geo-mapping provides location-based alerts, letting you know when a truck is at its destination or when it enters a no-drive zone. You can also configure the software to send alerts and notify you of any other situation, such as roadside assistance needs or truck transfers.

Proof of Delivery

OmniQ's Route Edge software offers highly configurable proof-of-delivery with signature capture on a mobile computer, which allows for real-time delivery confirmation as well as receipt and invoice generation. Drivers can also scan all barcoded packaging and even take photos of the package at its delivery location or take photos of any damaged merchandise.

Direct Store Delivery (DSD)

Using real-time customer information and sales history, omniQ direct store delivery (DSD) solutions minimize returns and out-of-stocks by providing the right combination of products in the right amounts at the right time.

The software uses sales history, previous promotions, seasonal fluctuations, shelf space, and even weather conditions to help you forecast the right product mix for specific time frames. The OmniQ DSD solution also automatically generates invoices and allows invoice details to be transmitted between systems using a DEX connection.

Route Edge Automated Pickup and Delivery

OmniQ's Route Edge software is an enterprise-class solution designed to improve performance during the delivery, invoicing, and merchandising process. It allows configuration and control of enterprise routes, customers, products, and more.

Route Edge can help increase visibility to your inventory for better management, reduce returns and out-of-stocks, eliminate paperwork and administration, and improve customer service.

On-the-Road Inventory Management

OmniQ solutions don't just track your inventory in the warehouse or terminal. They also track inventory during loading and unloading, on the truck, and at delivery sites.

Using Zebra RFID technologies and mobile software, omniQ solutions allow your drivers to quickly identify, locate and track valuable and returnable assets, even if they're not immediately visible in a full trailer. Systems are also available that can automatically detect when key assets are no longer within range of the truck, alerting you so you can minimize losses.

Telematics and Vehicle Performance

OmniQ software allows you to monitor driver performance by tracking hard breaks, speeding, and other undesirable behavior so you can improve safety and efficiency via training and coaching. OmniQ solutions also couple with electronic logging devices (ELDs) to track time on the road and hours of service (HOS).

Advanced OmniQ systems offer cameras to detect road conditions and proximity to other vehicles, warning drivers in real time of potential issues. And omniQ telematics even allow you to track vehicle maintenance and plan for preventive service and maintenance before something breaks down.

Warehousing Applications

Receiving

In receiving areas, OmniQ software and Zebra RFID and barcoding solutions help automate and streamline your processes, allowing incoming pallets and items to be instantly and accurately identified and assigned to the correct cross-docking or put-away locations.

Real-time data and guidance directs workflows for maximum efficiency, notifying workers of inbound receivables and directing them to the correct locations, so inventory gets to where it needs to be, as quickly and efficiently as possible, with no guesswork or delays.

Cross-Docking

OmniQ software helps you get ahead of cross-docking requirements, providing timely data and information on what's arriving, whether it needs specialized handling or temporary storage, and where it needs to be staged and cross-docked for fast and efficient transfers.

With omniQ solutions and Zebra RFID technologies, you can track inbound shipments in transit and get AI-driven insights in advance and as trucks arrive, to help coordinate loading and unloading, combine product loads, and enable more efficient management and execution of every cross-docking process.

Put-Away and Replenishment

Using real-time data and automated direction from omniQ software and Zebra mobile computers, your workers can quickly and accurately process your receivables, reading pallet or item tags or scanning barcodes and quickly accessing information to help them get each item to the right put-away location along the most efficient path.

By automating put-away with this fully digital and intelligent approach, you can accelerate replenishment, ensuring your inventory is restocked just in time. You can also easily track and access inventory data, trends, and reports to help you stay ahead of your replenishment needs and avoid out-of-stocks.

Picking

OmniQ software solutions include voice-directed picking software, which can be combined with Zebra wearable mobile technologies to automate your picking processes and increase worker productivity by up to 15% and reduce picking errors by as much as 39%.

A typical voice-directed picking system includes a wrist-worn mobile computer to run voice-directed picking software, plus a headset and a ring-style finger-worn barcode scanner. This fully wearable and hands-free system allows workers to access orders and pick lists digitally, on the go, with audio and visual cues to direct them along the most efficient paths to the correct picking locations and the correct items to pick.

Since the system is hands-free, they can easily pick items from shelves or bins without having to juggle mobile devices, and they can use a finger-worn or built-in barcode scanner on their wearable computer to scan barcodes and verify each correct pick.

This process typically saves minutes on every order, resulting in dramatic increases in picking speed and efficiency and corresponding reductions in labor and costs. It also reduces the amount of warehouse walking required by workers and makes picking jobs more attractive to prospective workers.

Start Automating Your Logistics with AI-Driven Solutions.

To explore omniQ logistics solutions in more detail and learn how they can help you automate and streamline your processes for better visibility and efficiency, connect with our technology experts now, and we'd be happy to schedule a discovery call at your convenience.

800-242-7272 | info@omniq.com

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ABOUT OMNIQ

omniQ is a warehouse and supply chain systems integrator with a focus on the design, delivery, deployment, and support of efficiency-boosting technologies in warehousing, transportation and logistics. We offer end-to-end solutions through a consultative and collaborative approach, helping you choose the right strategies and select the right hardware, software, and services to tackle your biggest business challenges and realize your business goals.

Our highly tenured team of professionals has deep knowledge and expertise to solve problems, apply the right technologies, and simplify the integration process for our customers. Our work is backed by numerous customer references as well as a firm commitment to delivering measurable results and putting your business first.

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