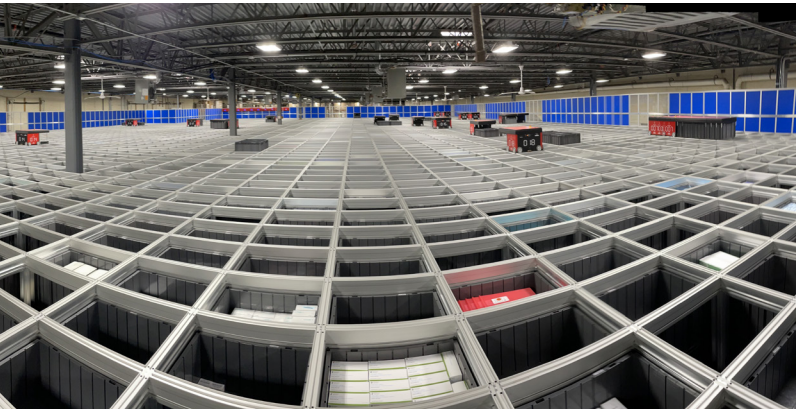




Zeek Logistics

Windsor Mill, Maryland



The Client

Zeek Logistics is a third-party logistics (3PL) service provider and freight forwarder that offers tailored e-commerce order fulfillment, warehousing, and transportation solutions. Customers represent a diverse range of industries, including dental and healthcare products, toys, pharmaceuticals, consumer packaged goods, and more.

The Challenge

Zeek Logistics operated as a paper-based, manual processing facility. However, labor reliability and turnover were constant issues, requiring the company to frequently contract with agencies for temporary workers. Further, the manual putaway, picking, and packing processes were rife with inaccuracies, errors, and low productivity rates. To ensure quality, customer orders had to be checked multiple times, adding more time to the fulfillment process.

Further, for Zeek Logistics' clients in the dental, healthcare, and pharmaceutical fields, government regulations require track-and-trace documentation of batch, lot, and serial numbers. In a manual operation, this process was both cumbersome and error prone.

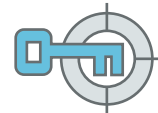
Seeking to replace its manual processes while creating a more efficient and streamlined operation that could support customer growth and expansion within its existing 48,000-square-foot leased facility, Zeek Logistics' leadership engaged KPI Solutions™ for help.

The Solution

Historically, most 3PLs avoid investing in automation because it is often not flexible enough to accommodate the frequent changes in customers and inventory profiles associated with contracted outsourcing. After a collaborative design effort, however, Zeek Logistics and KPI determined that a high-density AutoStore offered enough flexibility and capacity in a compact footprint to meet the 3PL's objectives.



Elimination of multiple manual processes by switching to AutoStore system allows up to 2,000 orders per day to be filled in a single shift.



Dramatically improved inventory and order accuracy, significantly higher productivity, elimination of temporary labor.



Increased inventory capacity in smaller footprint allows expanded service offerings to current customers and space for new ones.

Initially deployed in July 2021 and subsequently expanded in Spring 2022, the cube-based, goods-to-person automated storage and retrieval system (AS/RS) incorporates more than 28,400 bins. They are stacked 13-bins high and served by 28 robots.

The AutoStore holds more than 28,000 stock keeping units (SKUs) and covers approximately 11,200 square feet. It also incorporates eight workstation ports used interchangeably for restocking the system with received inventory and for picking orders. Oversized items that do not fit within the AutoStore bins are stored on static pallet rack and shelving in another part of the facility.

To connect Zeek Logistics' cloud-based enterprise resource planning (ERP) system, Acumatica, with KPI's Opto software that controls inventory management and order allocation within the AutoStore, KPI helped select a third-party middleware partner. KPI's software engineers oversaw the software development and implementation to ensure successful interfacing between receipts, orders, and shipments.

Streamlined Receiving, Picking, and Packing Process

At the inbound docks received items are unboxed, detrapped, scanned into inventory, and placed in reusable plastic totes. They then travel via 24V motor-driven roller (MDR) conveyor to an induction port for restocking the AutoStore system. Their barcodes are scanned and associated with specific AutoStore bins. Once the inventory is in the system it is available for fulfilling orders.

After orders are received at the ERP, it transmits them to KPI's Opto software. The software allocates orders to specific reusable picking totes, then groups those orders into batches of five. Totes travel to picking workstations on 24V MDR conveyor. The associate stationed there places the batch of totes under light-directed picking modules. Once the outbound order totes are scanned at the port, the AutoStore presents bins with the required inventory to the operator for order selection. The light modules illuminate to indicate which order bins require each item and the necessary quantity.

Upon completion of an order, 24V MDR conveyor transports the reusable totes to a consolidation and packing area. There, associates match any oversized picks up to items in order totes. Associates stationed in the packout zone select the appropriate box size or padded envelope for the order, places the items in it, adds dunnage as necessary, and applies a shipping label. Finished parcels travel by conveyor to an automated, in-line case sealer, then route to outbound shipping docks where staffers load them onto the appropriate trailers.

Numerous Challenges Overcome During Implementation

The COVID-19 pandemic had just emerged when Zeek Logistics engaged KPI. Project teams from both organizations worked remotely to develop and evaluate solutions before KPI's project, electrical, and controls engineers were able to visit in person. Further, during implementation, numerous challenges arose with the leased facility. These included unlevel floor conditions, fire protection upgrades, overhead heating units that caused height obstructions, and local permit authorities.

The two organizations were able to overcome these challenges due to KPI's partner-based, design-build project structure. By applying an open book design/build approach, Zeek Logistics' team was able to examine multiple types of equipment, vendors, and technologies, resulting in a unique solution that met their needs. This methodology made all costs and alternatives fully transparent to the client, while ensuring the optimal facility design, equipment selection, software deployment, and overall solution implementation.

The Value

- With the AutoStore system, Zeek Logistics now easily handles 1,500-2,000 orders per day and 3,500-4,500 order lines in a single shift.
- Significantly fewer workers are needed to complete this work than before, eliminating Zeek Logistics' reliance on temporary labor to compensate for inconsistent workforce attendance and turnover issues.
- Both inventory and order accuracy has improved exponentially. Capacity has also increased, enabling Zeek Logistics to offer expanded services to existing customers and to add new ones.



KPI Solutions is an end-to-end warehousing and distribution solutions provider. We partner with our clients to analyze, design, implement and support a full range of customized supply chain solutions that elevate distribution performance, provide competitive advantage, and enable growth. Our data-driven, technology-neutral approach transforms operations with automation to boost fulfillment speed, reduce reliance on labor, and improve agility. Our full-service capabilities include consulting, engineered concept design, systems integration, warehouse software and lifetime services.

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