



AUTONOMY IN ACTION

GLOBAL LOGISTICS & FULFILLMENT LLC

EXECUTIVE SUMMARY

JULY 2022

In line with the global e-commerce boom, the warehousing industry is experiencing rapid growth and even industry stalwarts are struggling to scale their operations to meet burgeoning demand. Consequently, traditional labor resources are drying up and becoming more expensive.

Global Logistics & Fulfillment ("GLF") is no stranger to these trends. For more than 25 years, the company has been a leading provider of distribution, fulfillment, and 3rd-party logistics (3PL) services. With warehouses in San Diego and Las Vegas, it maintains 300,000+ square feet of cumulative space for storage, packing, and assembly. Like many others in the industry, GLF has a customer base that is constantly growing their warehouse footprint. Today, their facility has never been busier, yet the strain on their workforce and the risk of losing business to competitors has never been higher.

Facing rising labor costs, increasingly demanding customers, and an urgent need to scale their business, GLF sought an innovative solution to streamline their operations. Enter Cyngn and Columbia Vehicle Group's new DriveMod-enabled Autonomous Stockchaser. After a brief integration period, the Autonomous Stockchaser supplemented GLF's workforce to transport pallets around its Las Vegas facility. In only a four week pilot deployment period, the new Stockchaser was able to both significantly increase labor productivity and produce material cost savings.

*Wondering whether your warehouse could benefit from industrial AVs? [**Find out here.**](#)*

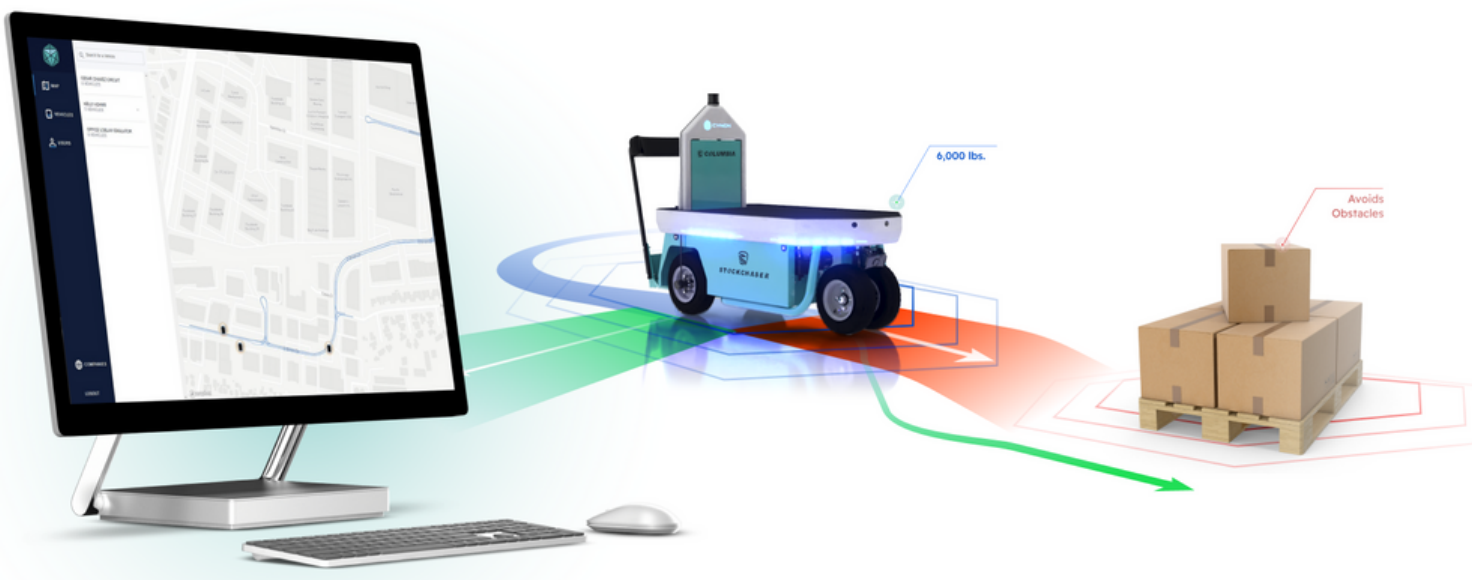
APPROACH

Deploying Cyngn's DriveMod Autonomous Vehicle technology at GLF, involved a simple, yet robust set of steps:

- 1 Conduct a site assessment.** First, Cyngn interviewed GLF's operations managers to obtain a thorough understanding of GLF's process flows. Then, Cyngn's field engineers surveyed GLF's facility to document the operational design domain ("ODD") including the lighting, lane widths, and types of obstacles the vehicle could encounter. From this, Cyngn was able to identify the transporting of pallets from an order fulfillment station to outbound shipping as the optimal use case for the deployment.
- 2 Map the facility.** In order for an AV to operate, it must know where it is within its environment. To accomplish this, Cyngn scanned the entirety of GLF's facility to create a detailed virtual map.
- 3 Bring-up the vehicle.** Once the map was created, Cyngn worked with GLF management to define the vehicle's missions, which included the routes vehicles would take and the stops where pallets could be loaded and unloaded onto the vehicle.
- 4 Train key personnel.** Finally, before the vehicle was brought into full autonomous operation, Cyngn trained GLF employees on safe use of the vehicle. Then, it was seamlessly integrated into their daily workflow.

Throughout the deployment period, Cyngn rigorously collected data on vehicle usage, labor productivity, and process augmentation.

Curious to see our bring-up process in action? Watch it [here](#).



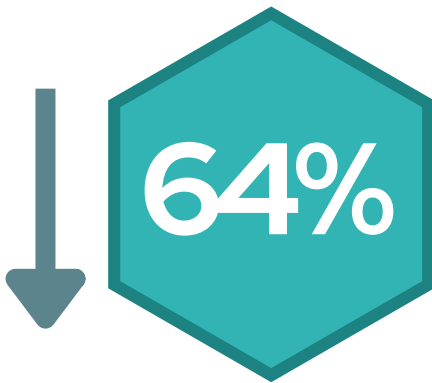
RESULTS



"Working with Cyngn on an autonomous vehicle implementation really opened our eyes to endless possibilities and it's part of what we're trying to plan for in the future. I didn't realize how quickly my team would become accustomed to the autonomous vehicle. It got to the point where when the pilot was over a lot of our team looked around and said 'Hey! Where's the vehicle? Where's the vehicle?'"

- Kenn Morris, Vice President | Global Logistics & Fulfillment

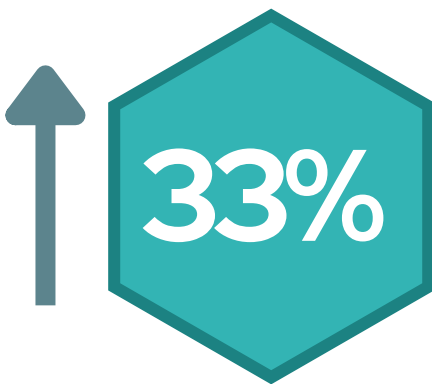
Throughout the four-week pilot deployment period, the DriveMod-enabled Autonomous Stockchaser produced:



Human Labor Cost

64% Reduction in human labor cost per pallet created in comparison to forklift usage.

In a typical warehousing operation, total annual savings could exceed \$100,000 given sufficient pallet throughput.



Labor Productivity

33% Increase in labor productivity in comparison to electric pallet jack usage.

This allowed GLF employees to focus more time on critical tasks within their operations such as pallet creation, order fulfillment, and customer support.

Introduction of the Autonomous Stockchaser delivered supplemental benefits as well. The vehicle provided GLF management with real-time data and reporting on operational analytics, created a safer working environment for GLF employees, and enabled further growth of GLF's client base. Lastly, the Stockchaser served as a visible sign of GLF's commitment to innovation, empowering them to continue surpassing their clients' expectations.

Learn more about both our deployment at Global Logistics & Fulfillment and our partnership with the Columbia Vehicle Group [here](#).



INTERESTED IN AN AUTONOMY PROJECT OF YOUR OWN?

Cyngn is capable of integrating its DriveMod technology within a wide variety of environments tailored to your use case specifications.

Have a project in mind? Reach out to us [here](#).

[Learn more about our autonomous vehicle solutions.](#) ▶