Improve Drayage Operations through Application of Real-Time Data

A Glance at Clean Freight Strategies

CONGESTION IN PORTS

Each year truck drivers lose 15 million hours because of congestion in North American ports. Data technologies can cut time drivers spend in ports by 25%.

25%
reduction
in delays

131
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saved per
truck

Third-party logistics providers (3PL) can help carriers save time, increase efficiency, and reduce emissions through the use of real-time data at ports. This strategy is relevant for many 3PL sectors, including asset-based 3PLs, freight under management, brokerage, and freight forwarding.

WHAT IS THE CHALLENGE?

Port drayage plays an important role in the supply chain by linking ships to other modes of transport. Drayage truck drivers pick up containers from ports and transport them to the next carrier or distribution center. At ports, drivers often lose valuable time navigating complex, crowded environments to find the right containers. Congestion, inconveniently located containers, lengthy check-in processes, gate queues, and other inefficiencies contribute to 15 million wasted man-hours at North American ports each year.

WHAT IS THE SOLUTION?

Real-time data can significantly enhance the efficiency and transparency of drayage operations. During the past decade, many companies have created new data-based technologies, including mobile applications, radio frequency identification, electronic on-board recorders, and sensors that enhance communication and organization at ports. These tools can be used to:

- **Provide drivers with up-to-date, useful information.** Sensors on containers provide information about the location and condition of containers, allowing drivers to locate them more quickly and easily.

- **Match containers and drivers.** Mobile applications can match truck drivers with containers when trucks arrive at ports based on factors such as ease of access and loading time.

- **Analyze data to improve operations.** Third-party logistics can analyze data to understand how delays in different parts of the port affect drayage operations and recommend strategies to improve operations.

- **Connect with automated landside port systems.** Many ports have automated a significant part of their gate operations and by connecting real time truck data to these systems logistics parties and drivers can reduce turn and wait times; improve access and coordination on a range of freight transfer activities; and strengthen overall terminal efficiency.

COSTS

The costs of this strategy typically include the direct costs of the technology as well as implementation and coordination costs. 3PLs may work with several suppliers and carriers; getting different companies to use one app or system requires coordination between companies and training for truck drivers.

Before drayage technology. Drivers wait to pick up loads until their container is located and available.

With drayage technology. Truck drivers know the exact location of their containers. With matching technology, they are assigned containers that are readily available.

SAVINGS AND BENEFITS

This strategy enhances the efficiency of port drayage operations. One company's drayage technology is projected to reduce the time trucks spend in ports by 25%. The time savings of this strategy provide several benefits:

Saves fuel and reduces emissions. A typical port drayage truck could save 131 gallons of fuel in a year from reduced idling and cut CO_2 emissions by 2,942 pounds. An idling heavy-duty diesel truck consumes about 0.8 gallon of fuel per hour and produces 24 grams of NOx per hour. Ports typically are located near densely populated urban areas, making air quality a concern.

Helps protect near-port communities. Ports typically operate near communities that often are overburdened with multiple sources of pollution, from ports to freeways and factories, which cause a range of public health issues. Technologies that enable real time visibility can help mitigate and reduce harmful emissions from congestion, idle and excessive dwell times in and around ports.

Minimizes the need for container shuffling. Drayage technology helps drivers find loads more efficiently. One company estimates that its technology reduces time spent shuffling through containers to find loads by as much as 50%..

Provides usuable information. Data management systems can assist 3PLs in ways that go beyond ports. They provide information that can help 3PLs identify in-efficiencies and manage fleets more strategically. Real-time data also makes the supply chain more transparent.

Improves reliability. These tools help ensure that drivers can get in and out of ports in a reasonable amount of time, helping ensure on-time delivery and reducing demurrage costs.

NEXT STEPS

1 Examine drayage operations and identify bottlenecks. Working with suppliers, carriers, and other stake-holders, 3PLs can inventory data tools and assess opportunities for new applications of real-time data.

2 Explore real-time data technologies to identify options that meet the needs of carriers and suppliers. Conduct a cost-benefit analysis and communicate with suppliers and carriers to identify challenges and opportunities associated with implementation.

3 Train drivers and other employees and partners to use the new systems. Starting with a pilot in one location or with one group of drivers can help ensure a smooth launch.

Please visit the SmartWay website at www.epa.gov/smartway to access more tech bulletins; additional resources and funding opportunities are available at EPS's Ports Initiative website (www.epa.gov/ports-initiative/technical-resources-ports).

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