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# Integrating Terminal Gate Appointment Systems at the Port of Los Angeles (Summary)

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This is a summary of “Integrating Terminal Gate Appointment Systems at the Port of Los Angeles” by Cyrus Ramezani and Chris Carr.<sup>1</sup> This research and analysis received funding from USDA’s Agricultural Marketing Service (AMS) through cooperative agreement number 21-TMTSD-CA-0004. The opinions and conclusions expressed are the authors’ and do not necessarily reflect the views of USDA or the Agricultural Marketing Service. The full report is available online at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4184051](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4184051).

## WHAT IS THE ISSUE?

During the COVID-19 pandemic, agricultural exporters utilizing U.S. West Coast ports experienced unprecedented supply chain disruptions such as port congestion, missed delivery windows from ocean carriers, inadequate receiving windows, and shortages of containers and other equipment (e.g., chassis). While these are multi-faceted problems along multiple segments of the supply chain, the use of terminal gate appointment systems has become an increasingly popular option for managing landside congestion affecting container-related disruptions. Such systems would optimize the flow of containers at ports by meeting the needs of various stakeholders (e.g., terminal operators, chassis providers, truckers, drayage providers, carriers, and shippers). An ideal terminal gate appointment system would also optimize the flow of trucks into and out of port terminals when picking up and dropping off containers. Integral to designing better systems are new information-sharing technologies. However, leveraging the new tools will require the various supply chain nodes to share more data than is currently shared (and earlier in the process), so that downstream users have sufficient time to adjust. Additionally, these systems must be resilient to “cascades” in the larger port operation—e.g., long container dwell times, labor shortages, trade disputes, etc.—that can undermine even the best appointment systems.

## HOW WAS THE STUDY CONDUCTED?

The methodology for this study was both practical and investigative. First, the authors gathered the firsthand views of various stakeholders that use the Port of Los Angeles—i.e., the port itself, its container terminal operators, drayage

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operators, motor carriers, chassis providers, Pool of Pools,<sup>2</sup> PierPass,<sup>3</sup> Harbor Trucking Association (HTA),<sup>4</sup> various technology startups, and agricultural exporters. The authors also integrated data from relevant reports and analyses—from government, vendors, and industry stakeholders. Finally, the authors participated in industry-sponsored events, including webinars and professional conferences.

## **WHAT DID THE STUDY FIND?**

### **Cooperative and Incentive Driven Appointment Systems**

The authors researched several examples of methods currently used by Port of Los Angeles stakeholders to improve terminal gate appointment systems. These approaches were then categorized as either “cooperative” (i.e., trucker notification systems) or “incentive driven” (i.e., imposing penalties for unwanted action or inaction).

**Cooperative approaches.** Currently, two Port of Los Angeles terminal operators are experimenting with cooperative approaches. The first implements a “push” appointment system that proactively identifies when a container is ready for pickup by a trucking company. In the past, trucking companies had to obtain a container’s status from one system and then book a pickup appointment through another system. The new system streamlines the process by sending trucking companies an automatic (push) email notification when their container has been discharged, along with the option to book a pickup appointment time of their choosing. This seemingly small process change is credited with earning the terminal operator that implemented it the distinction of having the shortest turn times of all the port’s terminal operators. Still, the system has not yet been as widely adopted as it could be, possibly because some trucking companies are biding their time, waiting to be convinced of the system’s value.

The second cooperative approach uses an internal, artificial intelligence system to prioritize appointments. High-priority containers are positioned at the top of the container pile at the terminal, which eliminates trucker wait times for picking up those containers. Although lower-priority containers at the bottom of the stack have longer wait times, truckers are notified of priority before pickup to help them plan accordingly. While this system shows promise, it must be refined and tested before it is widely used.

**Incentive approaches.** The Port of Los Angeles and its terminal operators have considered two incentive-based approaches—one of which was implemented for only a short time and another of which has yet to be fully implemented. The first approach, taken by a terminal operator, assessed a \$65 penalty each time a trucker either failed to arrive within their 1-hour appointment window or did not show up at all. This approach proved less than effective for two reasons: first, the penalty did not seem comprehensive in its application—it missed trucking companies affiliated with ocean carriers. Additionally, drayage companies argued these fees unfairly penalized them for conditions outside their control, such as long lines at another terminal or at a shipper’s receiving facility.

With the second incentive approach, the Port of Los Angeles benefits from its tariff authority to levy dwell fees on long-dwelling containers. Over the past several years, average container import dwell times rose from around 2.5 days to over 9, as importers (mainly retailers) left containers in port while they worked to clear their distribution centers. This practice resulted in severe port congestion, as containers arrived but were slow to leave the terminal. The Port of Los Angeles believes that the mere threat of container dwell fees helped to alleviate port congestion, and the port has delayed implementing tariffs several times.

### **Centralized Information Portal**

A promising tool for facilitating real-time communication between stakeholders and coordinating container flow is “Port Optimizer,” a centralized information portal created by the Port of Los Angeles. However, the ultimate usefulness of Port Optimizer depends on enough terminals sharing data and integrating their terminal operating systems and appointment booking systems into the centralized portal.

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<sup>2</sup> The [Pool of Pools](#) (POP) is a multi-pool agreement between the three major proprietary marine container chassis pools operating in the San Pedro Basin port complex.

<sup>3</sup> [PierPASS Inc.](#) is a not-for-profit company created by marine terminal operators at the Port of Los Angeles and Port of Long Beach to address multi-terminal issues such as congestion, air quality, and security.

<sup>4</sup> [HTA](#) is a coalition of intermodal carriers serving America’s West Coast Ports.

**API integration.** The authors examined the extent to which application programming interface (API) systems have helped integrate the operating and appointment systems of the terminals into “Port Optimizer.” The main benefit of API systems is their ability to facilitate real-time communication among different enterprise systems. Although Port Optimizer supports the use of APIs, the authors found the individual terminal operating and appointment systems are still not consistently API-connected.

**Appointment booking.** The authors identified the inability to make appointments within Port Optimizer as a persistent obstacle. Instead of booking within the platform, users must book appointments on terminal websites. The resulting inefficiency is difficult to resolve because it requires different entities (e.g., the Port, terminal, and possibly third parties) to be willing and able to integrate and share information across their systems.

Advances in the functionality of Port Optimizer—along with cooperative and incentive approaches—can help improve appointment systems. However, a truly effective solution will also need to include physical container management strategies like stacking and unstacking, as well as strategies to prevent and address system “cascades.”

## Recommendations

The authors synthesized findings from these methods to make recommendations for further improvement to the terminal gate appointment systems at the Port of Los Angeles:

- Improve the fluidity of port operations by creating a limited number of terminal (import) container stacks, and organize containers for pickup by their use priority.
- Reduce container stacking (and the resulting port congestion) by using peel-off piles for import container pickup.<sup>5</sup>
- Further study, develop, and implement more “push” appointment systems across all terminals.
- Convene a 1-day virtual summit on the business-model needed to support improved terminal appointment systems.
- Advocate for the use of Federal and State infrastructure funds to build out the technology ecosystem.

## PREFERRED CITATION

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<sup>5</sup> Under this system, truckers pull up to the indicated “pile” and simply take the next container that is “peeled” from the pile.