



Port Optimizer

Leveraging Big Data to address marine terminal visibility, execution, and efficiency

June 14, 2018

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Dateline Los Angeles October 2014

“The twin ports of Los Angeles and Long Beach are experiencing a **logistical nightmare** as they struggle to ease a bottleneck that could undermine retailers' all-important holiday shopping season and threaten the competitiveness of the region's economic engine.

In the **worst shipping crisis in a decade**, mammoth vessels loaded with products destined for the nation's stores are sitting idle just off the coast, waiting for **cargo languishing on the docks to clear.**”

LA Times
October 24, 2014



Pilot at Port of Los Angeles



Collaborative partnership with the Port of Los Angeles – largest port in N.A.

Port Optimizer

- Dynamic window into port and cargo information
- Operational insights for improved planning
- Advance information; 10+ days faster access
- Actionable; right information, right people

Pilot Scope

- 1 Terminal
- 2 Vessel Operators (Maersk, MSC)
- 10 BCOs, 5 Trucking Operators

Goal: Increase supply chain performance

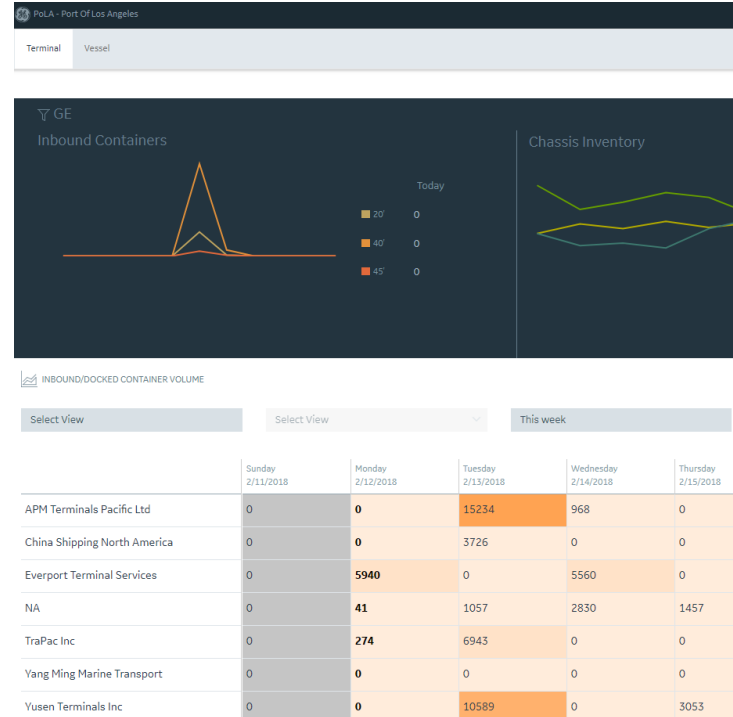
- Visibility
- Predictability and reliability
- Throughput

Pilot Results



93%

agree that the data is **easy to understand** and **valuable**



94%

agree that the portal is **easy to access** and **visually appealing**



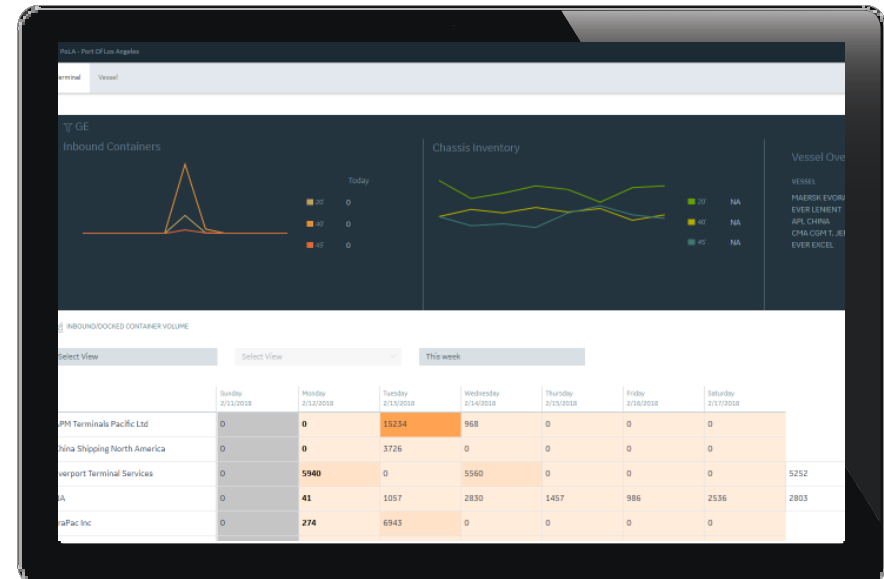
8-12%

Projected **efficiency increases**, as the solution is scaled @ Port of Los Angeles



Outcomes

- **Increased Visibility:** Eliminate cargo speculation with ~14 days of advance visibility.
- **Predictability:** Dynamic ETAs, machine learning and other analytics drive predictive performance.
- **Throughput:** Facilitates immediate throughput improvements to cargo flow.
- **Productivity:** 8-12% projected productivity increase as the solution scales.



Recognition



American Association of Port Authorities



Outstanding IT Project Award
Los Angeles Digital Government



Federal Maritime Commission



GE Digital Innovator Award



Port Community Challenges



Cargo Owner

- Knowing the status of goods in transit in advance
- Time spent searching for information
- Managing inventory levels
- Dealing with supply chain unknowns



Container Terminal

- Cost-effectively managing vessels of increasing size while improving space planning, and resource allocation
- Eliminating blind spots



Ocean Carrier

- Increasing need for cost savings, asset efficiency, and economies of scale



Motor Carrier

- Unpredictable cargo flow impacts fleet efficiency and revenue opportunity



Railroad

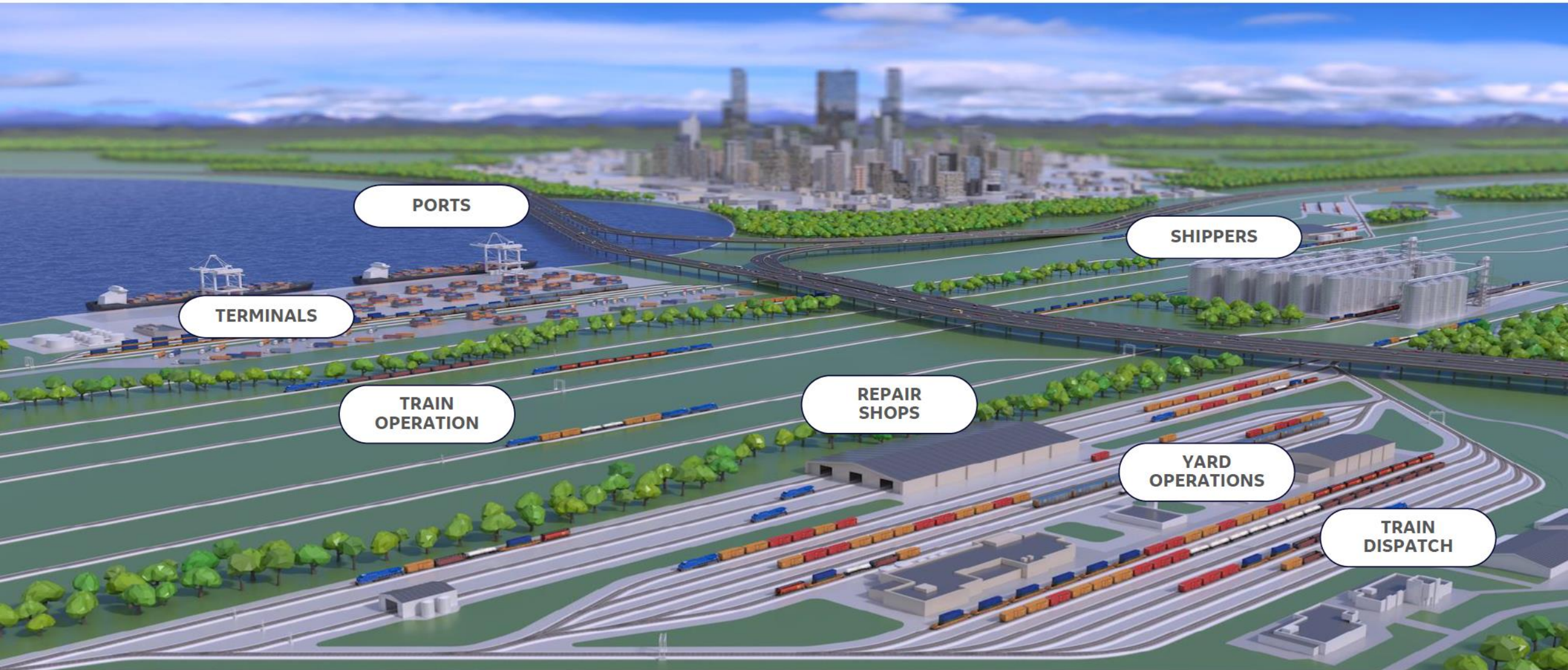
- Visibility to ship arrival times and container details for planning
- Reducing inefficiencies for better railcar switching



Chassis Provider

- Unpredictable cargo flow makes chassis demand forecasting and asset allocations challenging

Today's freight landscape ... *disconnected systems & processes... low asset utilization, high op expense, low velocity*



PORTS

SHIPPERS

TERMINALS

TRAIN
OPERATION

REPAIR
SHOPS







YARD
OPERATIONS

TRAIN
DISPATCH



Port Optimizer...new era of interdependency



 Cargo Owner Visibility + Cargo Velocity <ul style="list-style-type: none"> • ↑ visibility for better customer service • Better planning for dray partners → ↑ cargo velocity thru ports 	 Marine Terminal Ops Cargo Dwell + Cargo Velocity + Productivity <ul style="list-style-type: none"> • ↓ container dwell • ↑ velocity through better planning • Reduced and improved handling (touches, etc) 	 Ocean Carrier Visibility + Cargo Velocity <ul style="list-style-type: none"> • ↑ velocity of cargo thru port • ↑ velocity of empty returns
 Motor Carrier Turn Times + Productive Turns <ul style="list-style-type: none"> • Faster truck turn times • ↑ number of productive turns per day 	 Railroad Rail Volume + Visibility + Speed <ul style="list-style-type: none"> • ↑ rail volume through ports • ↑ visibility to export dates • Improved equipment planning • ↑ speed of rail volume thru ports 	 Chassis Provider Accuracy + Chassis Utilization <ul style="list-style-type: none"> • ↑ accuracy of chassis inventory and forecast → ↑ chassis utilization • Improved planning → ↑ chassis utilization

Enabling visibility and execution across an integrated supply chain

Features

- **System of Systems:** Digitizes disparate supply chain data and brings together into a single source of truth.
- **Cloud-Based Platform:** Automated data ingestion. SaaS model enables rapid deployment and seamless operation.
- **Flexibility:** API-driven architecture enables easy integration into existing IT systems (operating systems, appointment systems, etc.).
- **Data Stewardship:** GE does not own data! Transparent & consultative about how data is used. No sensitive information.....only public.
- **Predictive Analytics & Data-Driven Insights:** Real-time vessel & container status, intermodal equipment planning, and empty container returns.



Port Optimizer Roadmap



DIGITALLY CONNECTED ECOSYSTEM

ASSETS

OPERATIONS

NETWORKS

VISIBILITY

Collision Avoidance
APM OPM



MINE

Port Optimizer



PORT

Trip Optimizer
LOCOTROL
GoLINC
APM
EdgeLINC



LOCOMOTIVE

Smart Intermodal
Yard Planner
Smart Automotive



YARD & TERMINAL

Movement Planner
Dispatch



NETWORK

TMS



SHIPPER

TMS

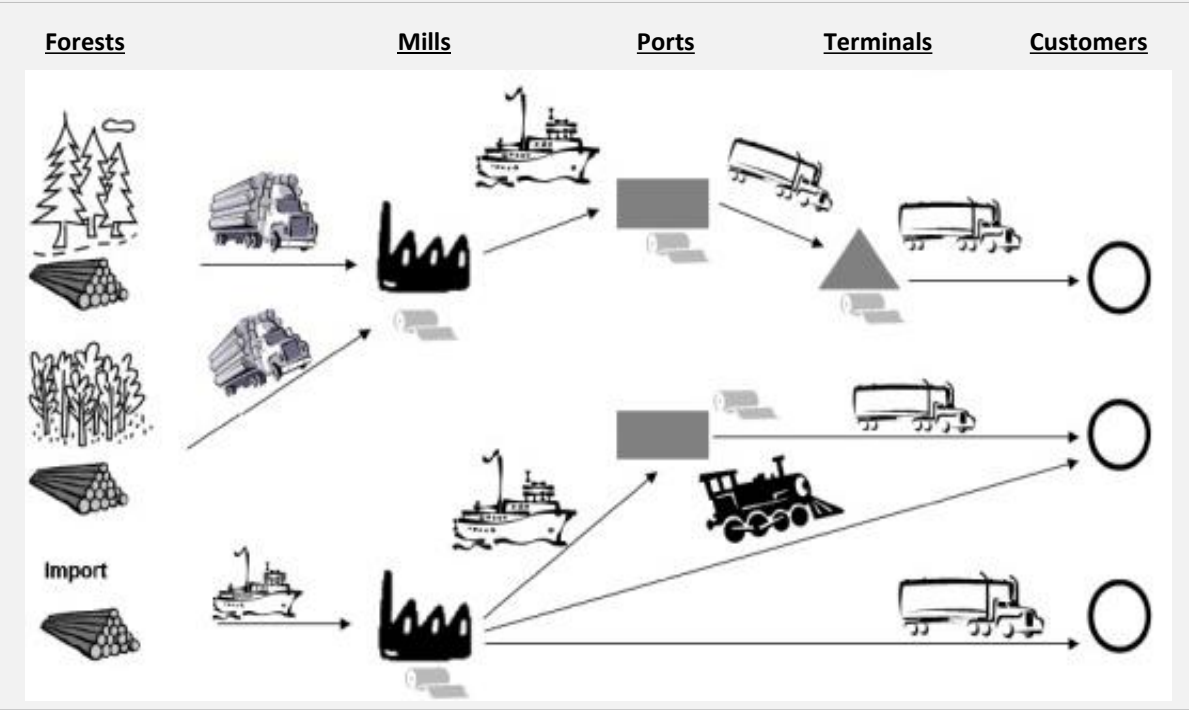


RECEIVER



Digital transformation opportunities

Transportation Landscape



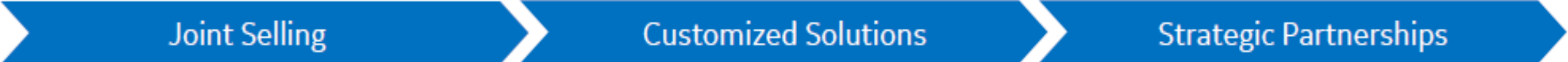
Customer Priorities

- Reduce manual process, data entry
- Eliminate spreadsheets, paper-based systems
- Improve visibility – inventory in transit, on hand
- Increase throughput, faster equipment turns
- Decrease inventory buffer and safety stock
- Link operations to monthly accounting closing
- Drive standards, controls, and best practices
- Increase data driven insights

Digital drives automation, efficiency, and transparency



Our Growing Partner Ecosystem



accenture altran at&t BearingPoint. Bell Birlasoft® BT Capgemini 中国电信 CHINA TELECOM

CISCO. Cognizant DELL EMC Deloitte. Digital engro corp ERICSSON EY genpact Hewlett Packard Enterprise

HCL HUAWEI Infosys intel ITC INFOTECH L&T Infotech L&T Technology Services Marubeni

Microsoft NEC ORACLE orange pitney bowes pwc ROGERS™ SAP SoftBank

Softtek TATA Tech Mahindra T-Systems verizon vodafone WIPRO





Unlock Supply Chain Savings With MatchBack Systems

MatchBack Systems is a logistics software company with an innovative approach to matchbacks

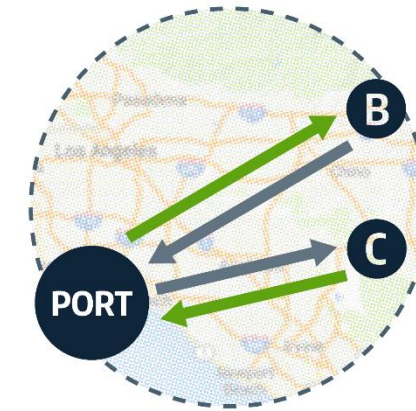
- Automate matchbacks across company and ecosystem

- Utilize big data analytics to create systematic matchbacks

- Two-party collaborative matchback portal with automated guidance

Matchback (street-turn) | verb:

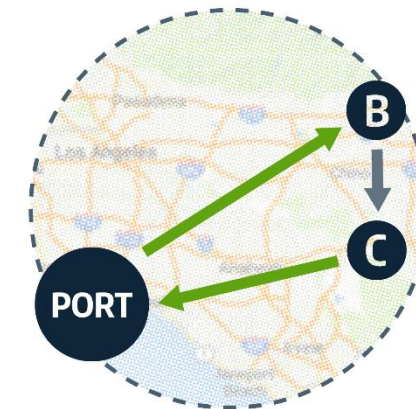
Match delivery containers and pick up bookings inland to minimize miles/km driven; increase container efficiency; reduce costs and emissions



WITHOUT MATCHBACK



4 TRIPS



WITH MATCHBACK

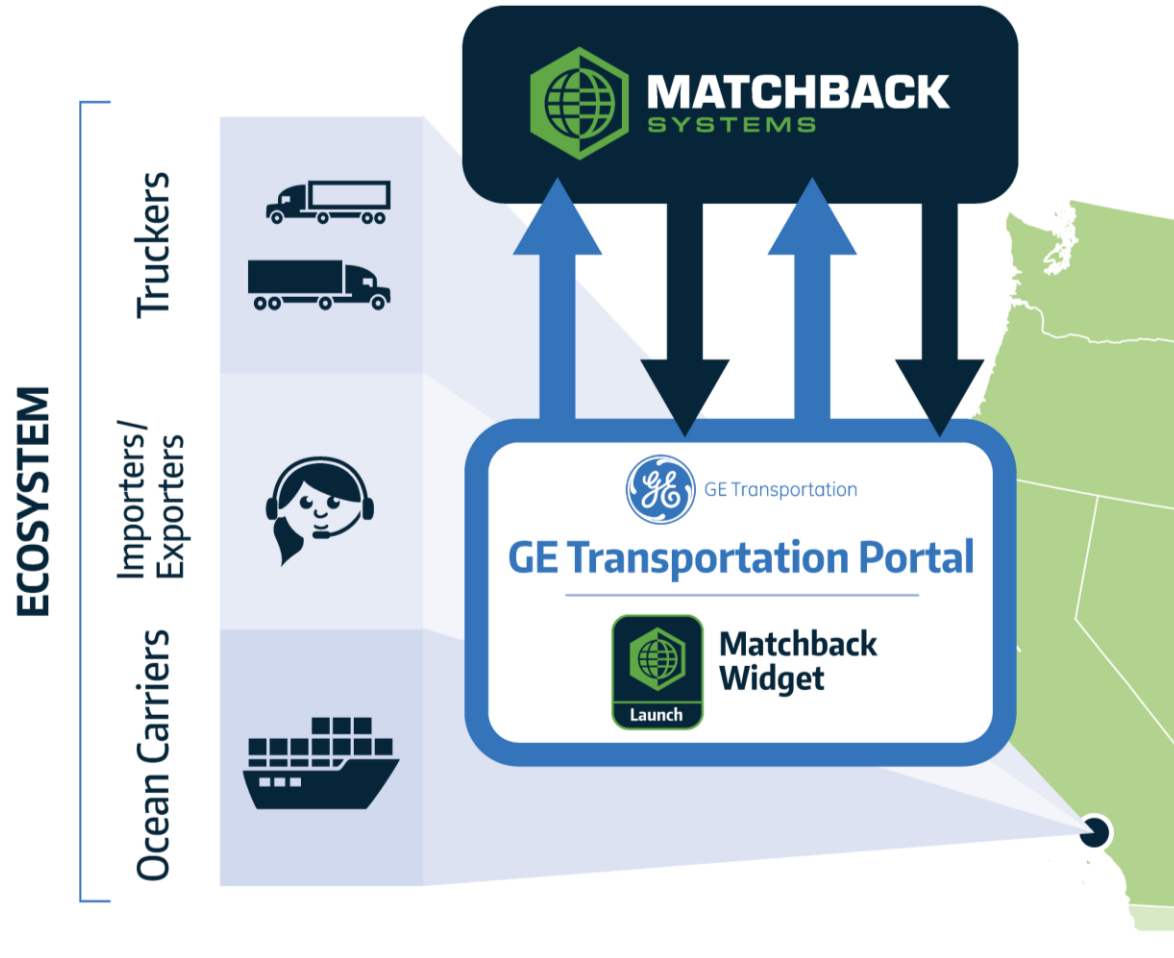


2+ TRIPS





Unlock Supply Chain Savings With MatchBack Systems



1. **API Data**
2. **API Widget Update**
3. **SSO Single Sign-on**
4. **API Confirmed Matches**



How can AgTC members help drive ecosystem improvement?

- **Ask your carriers if they have embraced the program and are willing to share data with GE at Ports of Los Angeles and Long Beach.....if not, ask them why.**
- **Encourage your dray providers to access the portal.....it works!**
- **Challenge current paradigms.....WE are all part of the ecosystem and WE can make changes if WE work together.**
- **Ask for a demo or a meeting.....GE is still building the portal and new versions are released every month.**
- **Participate in POLA export roll-out!**

