



Christine Wolf
Senior Planner, NWSA

NWSA's Port Community System: A TSMO Approach for Ports

ITS Washington
December 11th, 2018

Change management, Not IT—or infrastructure—project

A Port Community System:

- Is a neutral and open electronic platform enabling intelligent and secure exchange of information between public and private stakeholders in order to improve the competitive position of the port's community
- **Optimizes, manages and automates port and logistics efficient processes** through a single transmission of data and connecting transport and logistics chains

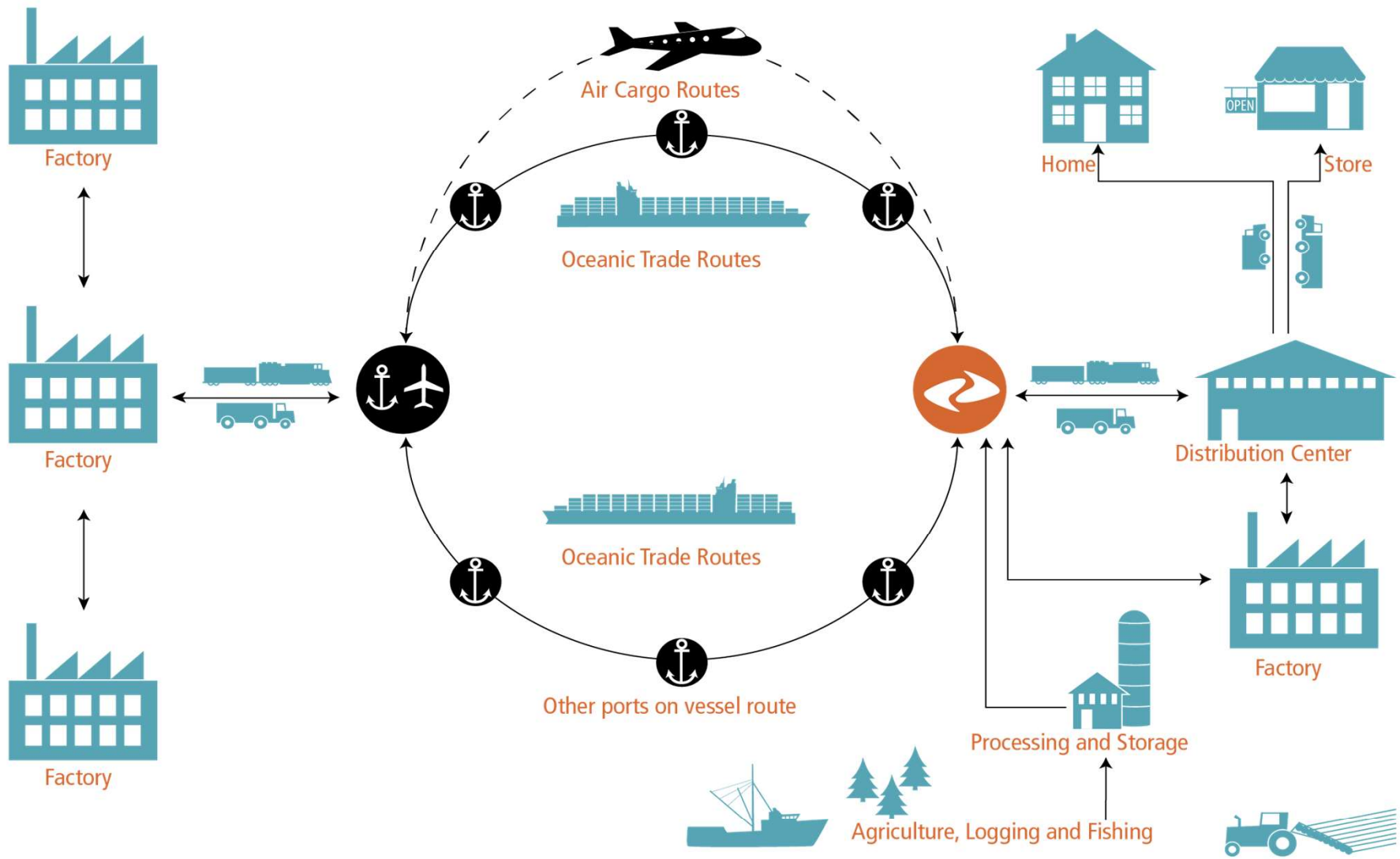
Source: International Port Community System Association

Transportation Systems Management & Operations is:

- An integrated set of strategies to **optimize the performance of existing infrastructure** through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects
- Designed to **preserve capacity and improve security, safety, and reliability** of the transportation system

Source: MAP-21, SECTION 1103 (a) (30) (A)





NWSA in the Logistics Chain

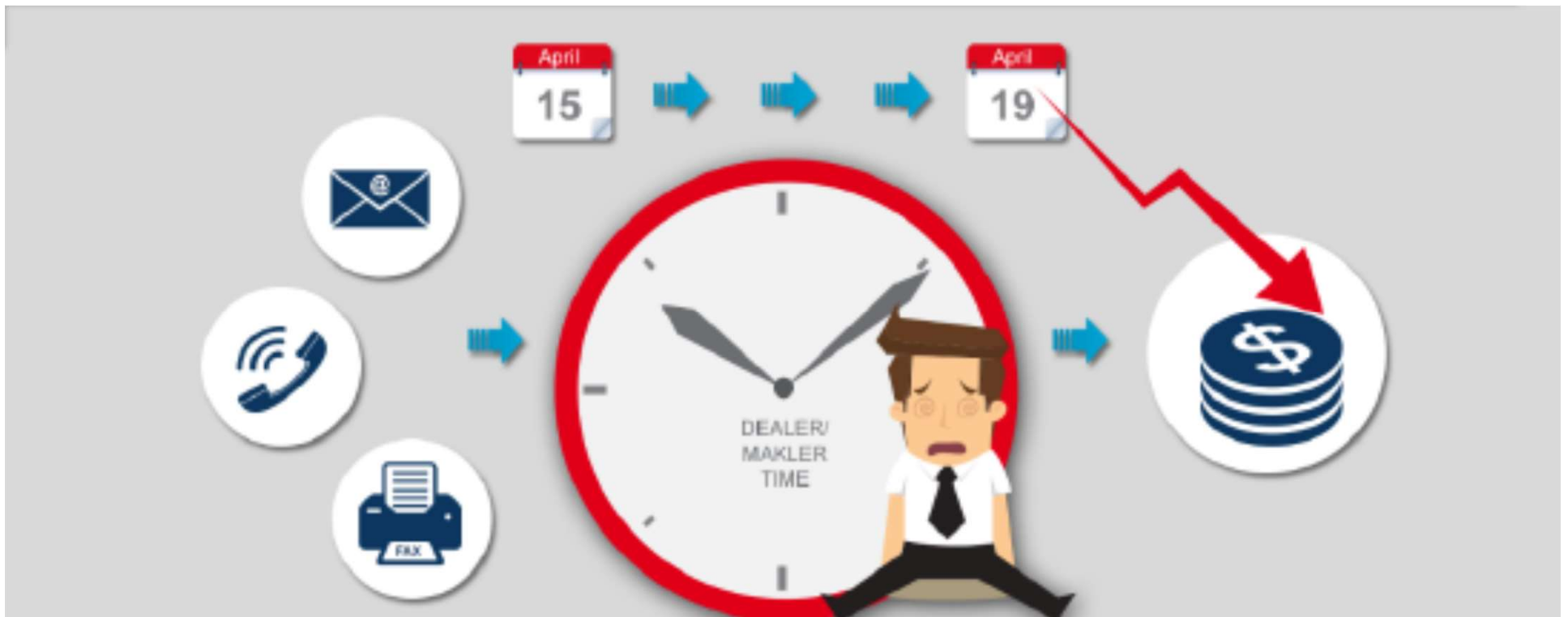
How do ports currently operate?

- Unpredictable vessel arrivals lead to inefficient resource allocation
 - Terminal operators struggle to staff appropriately
 - Trucker drivers arrive at the port to find:
 - Their cargo has not arrived yet
 - Equipment is unavailable
 - Long queues at the gates



“To get a quotation for transport, a customer currently has to wait up to three days. To book a container, as many as 12 to 14 coordination stages are required by email, telephone and fax as an industry average.”

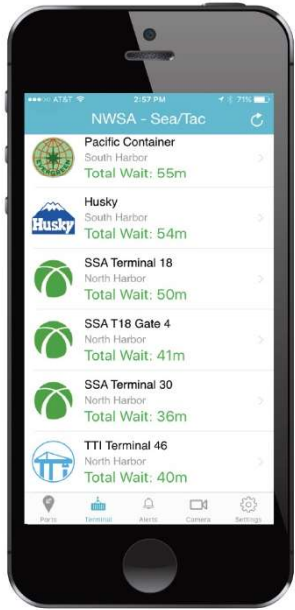
Ferry Heilemann, Founder of Freighthub



Source: Port of Hamburg

The solution: The Port Community System

SMARTPHONE



TERMINAL OPERATOR



DATA

DATA

PCS

DATA

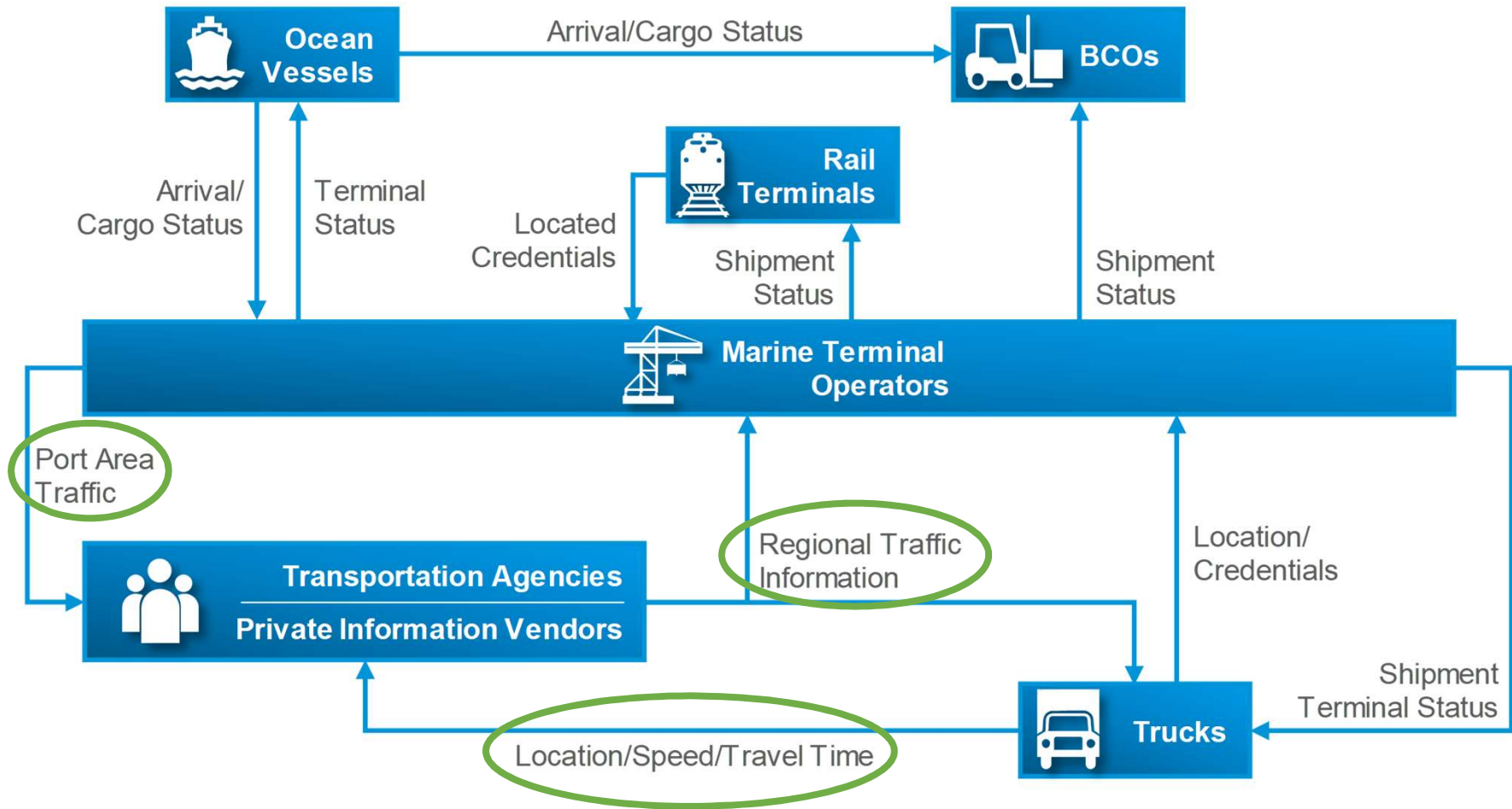
DATA

TRUCKS



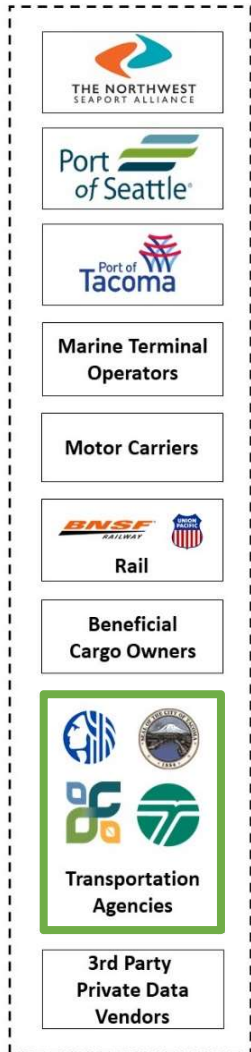
OCEAN VESSELS

High-level PCS architecture

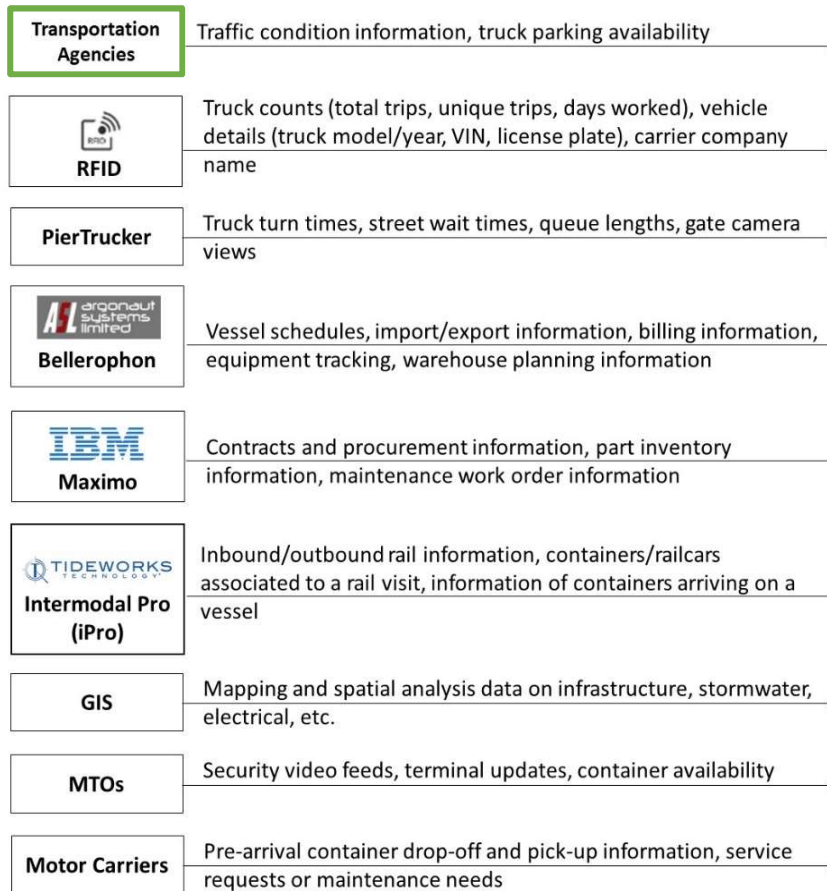


System overview

Users



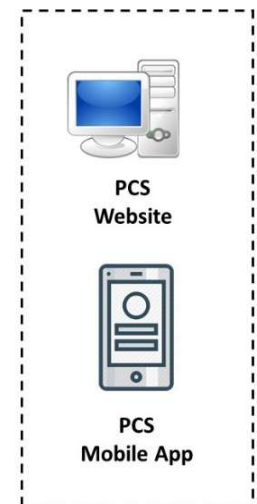
Data Sources



System Concept



Dissemination Methods



PCS user needs

- **Compiled list of 150+ user needs**
- **Consolidated into set of 30, grouped by functional area:**
 - Traveler Information
 - Mobility and Safety
 - (Port) Productivity
 - Security
 - Data Management
 - System Operations



Functional area - Traveler Information

UN1	Need to compile and provide high-quality, real-time Port community information, data, and performance indicators that are accurate, searchable, consistent, consolidated, based on defined standards, and compatible with a variety of existing and proposed external systems.
UN2	Need to send out alerts/notifications on recurring and non-recurring basis regarding traveler information and port activities (import/export).
UN3*	Need to provide short- and long-term truck parking information.



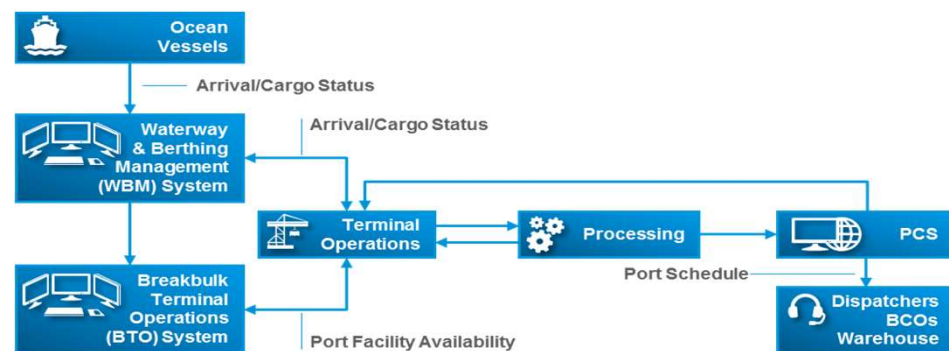
Functional area - Mobility and Safety

UN4	Need to improve real-time situational awareness of Port and regional operations to improve freight movement efficiency (e.g., regional weigh-in-motion systems, street turn opportunities, pre-gate truck queues, gate activity, on-terminal turn times, Port travel times, equipment status, container location, Last Free Day, trouble transactions, vessel movements, traffic conditions, yard utilization, rail car movements, extra gates, etc.).
UN5	Need ability to detect, monitor, and manage traffic congestion, queues and blockages in and around the Port area, including potential secondary traffic safety issues.
UN6*	Need to address at-grade rail crossings and associated safety concerns, traffic delay issues, and noise impacts.
UN7*	Need to establish coordinated, enhanced incident and evacuation management programs for the Port and facilities accessing the Port.



Use Case Example: Early cargo visibility for planning

Issue	Terminal operators, trucking firms and NWSA planners are preparing for the week ahead based on vessels scheduled to arrive
PCS Benefit	PCS provides up-to-date information regarding estimated vessel arrival times and the number of containers to be offloaded
Stakeholder Actions	Terminal operators can ensure that staffing levels are adequate
Result	Reduces uncertainty and decreases the amount of time that truckers and port staff spend readjusting schedules and waiting for late shipments. Also translates into less congestion and lower levels of air pollution on and near the port.

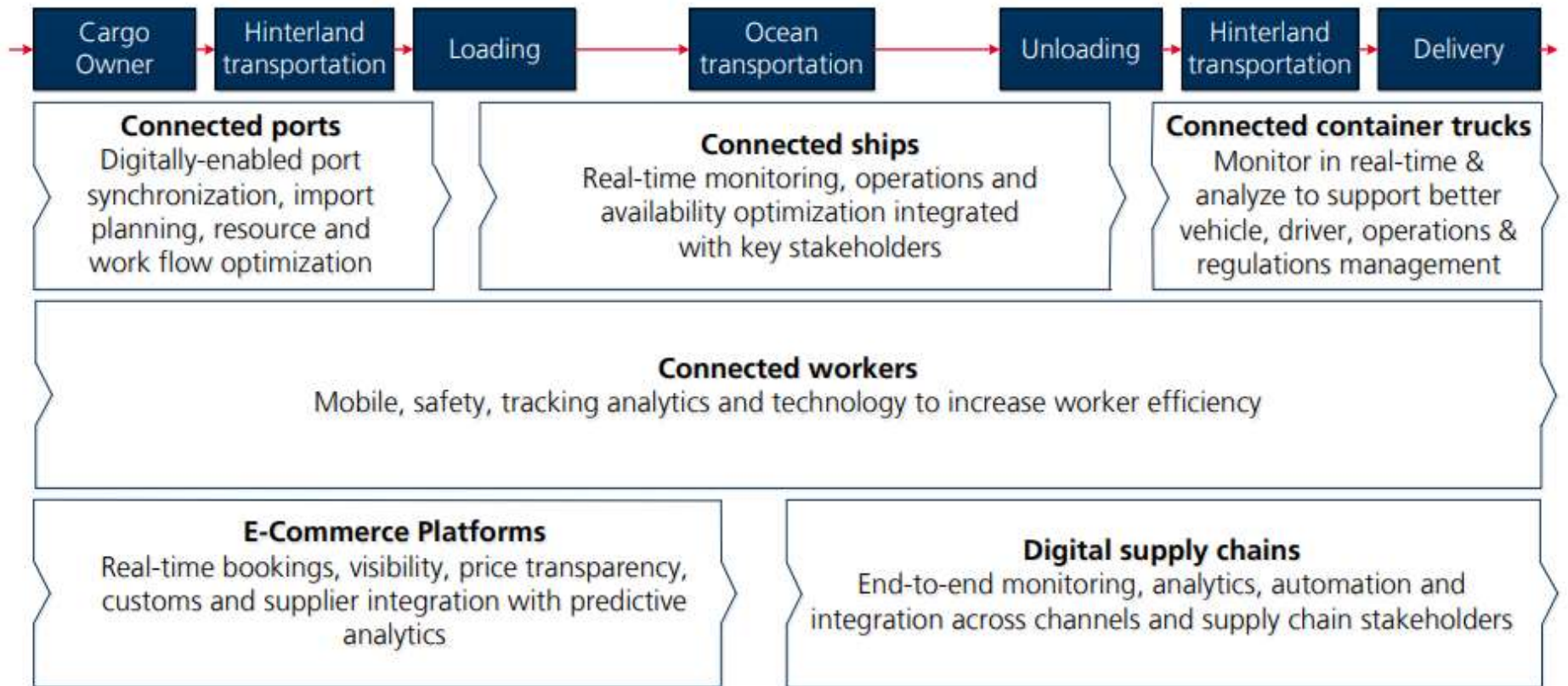


Next steps

1. Currently finalizing the Concept of Operations
2. System Requirements
3. System Advertisement
4. System Procurement
5. System Development
6. System Commissioning



The long-term vision



Source: Port of Hamburg, Accenture



**THE NORTHWEST
SEAPORT ALLIANCE**
Gateway to Solutions

THANK YOU!

For more information,
please visit us at
www.northwestseaportalliance.com



facebook.com/nwseaportalliance



twitter.com/SeaportNW



instagram.com/nwseaportalliance

