



# Understanding Mixed Cargo Operation : Challenges & Opportunities

Lev Aispur

[Lev.Aispur@kaleris.com](mailto:Lev.Aispur@kaleris.com)

# Navis Terminals Located Near the Black Sea & Balkans





# Mixed Cargo

**Challenges**

Site and  
Material  
specific needs

Varied real-  
world handling  
processes

Material and  
Regional  
specific  
regulations

Storage  
Separation  
requirements

Climatic needs

Differing  
dimensions  
and units of  
measure

**Risks**

Reduced  
quality

Inefficient &  
Costly  
handling

Compliance  
Issues

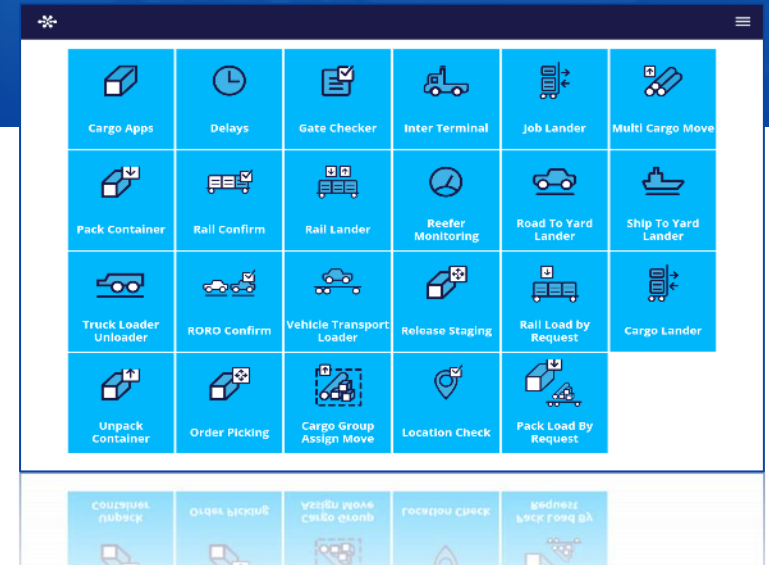
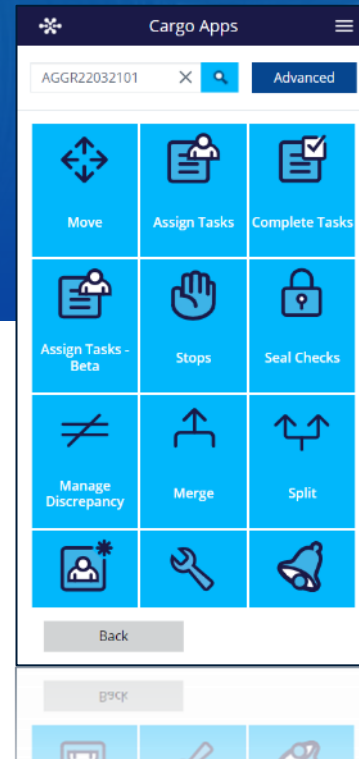
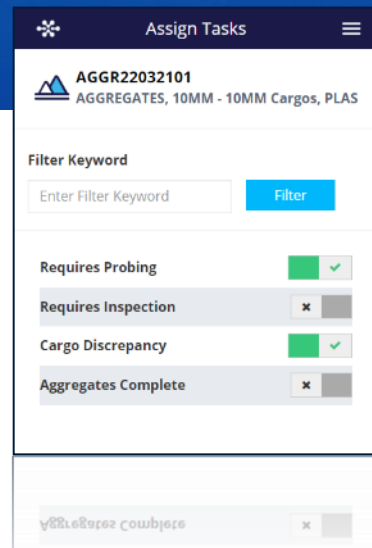
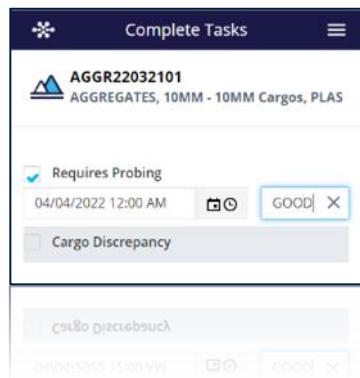
Cross  
Contamination

Deterioration

Inaccurate  
conversions

# Challenging Operating Environments

- Practical solutions for different environments
- Material specific activities
- Accurate, granular charging capabilities





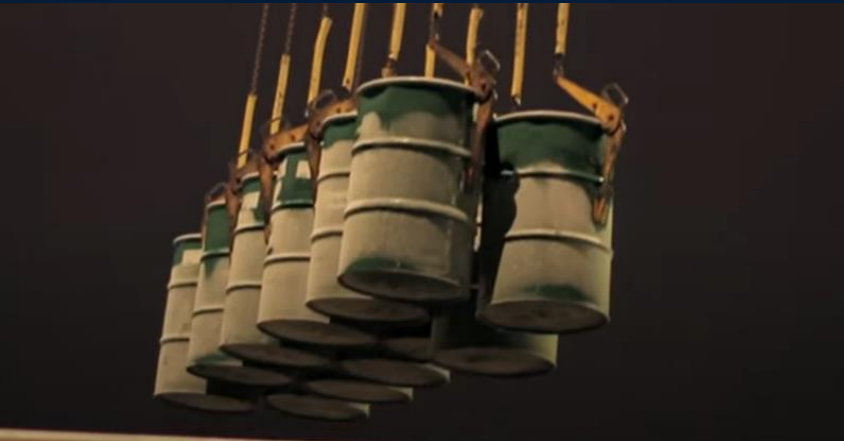
# Non-standard Handling



**Variability adds time and money**



**Balancing act between Customer service & profit**



**Increased risk of human error**





Challenges we face

## Complex Services

- Varied processes and handling options
- Broad range of Value-Added Services
  - Packaging, reshaping, and repackaging
  - Self-service storage
  - Container Filling
  - Grading
  - Assembly
  - Reticketing
  - Specialized storage

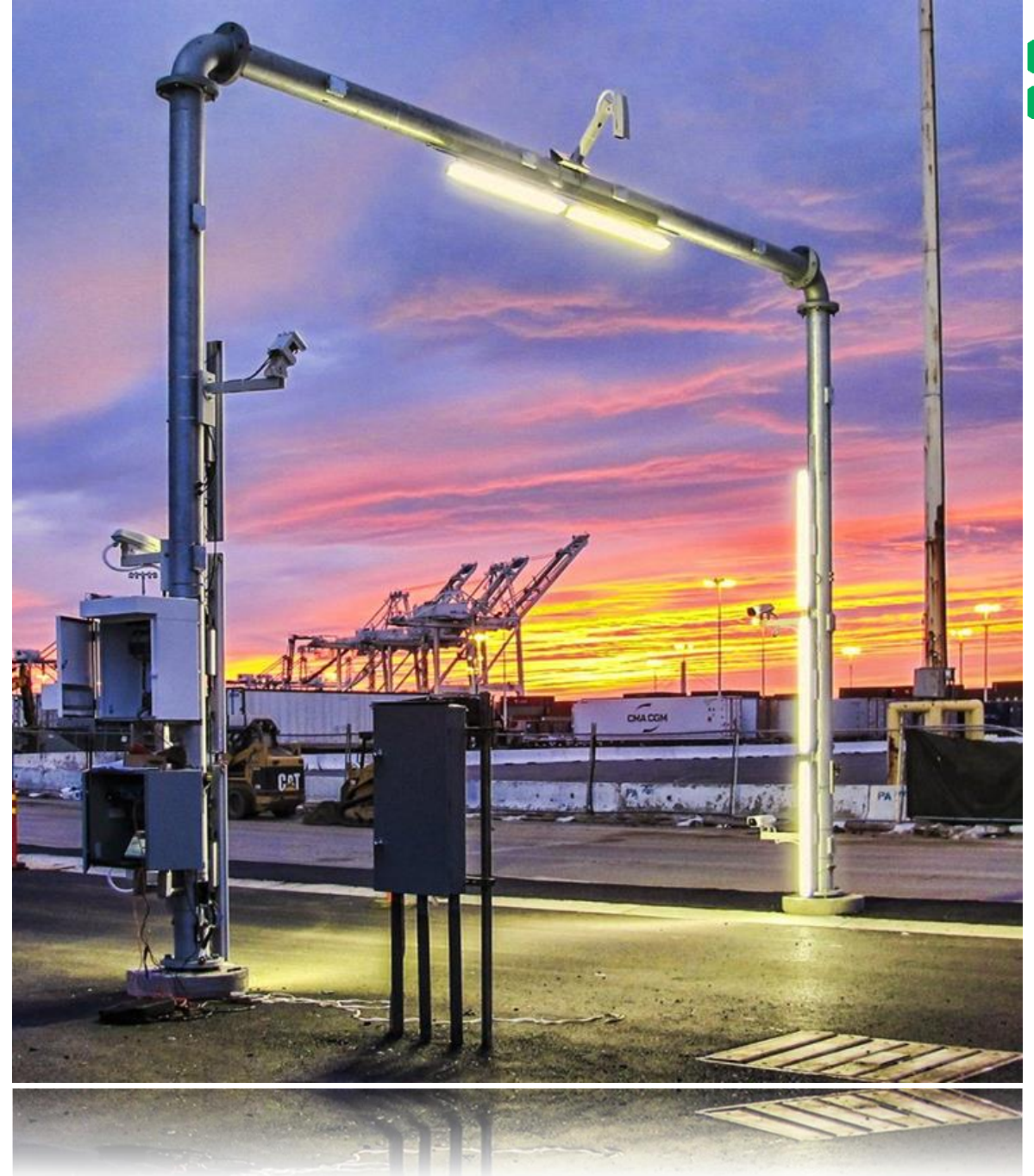




Challenges we face

# Technology Challenges

- Lack of investment
- Change management
- Traceability & Visibility
- Automation
- Gate Complexity
- Connecting with Devices
- Integration with systems





Challenges we face

## Limited Standardization

- Defining general cargo in EDI is difficult
  - Free text fields & bespoke processing
- No agreement among suppliers or manufacturers on the use of specific attributes across the supply chain





# Mixed Cargo & Intermodal

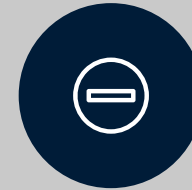
## Challenges we face



Complex & Varied



Technology Challenges



Limited Standardisation

## Solutions need



Flexibility & Adaptability



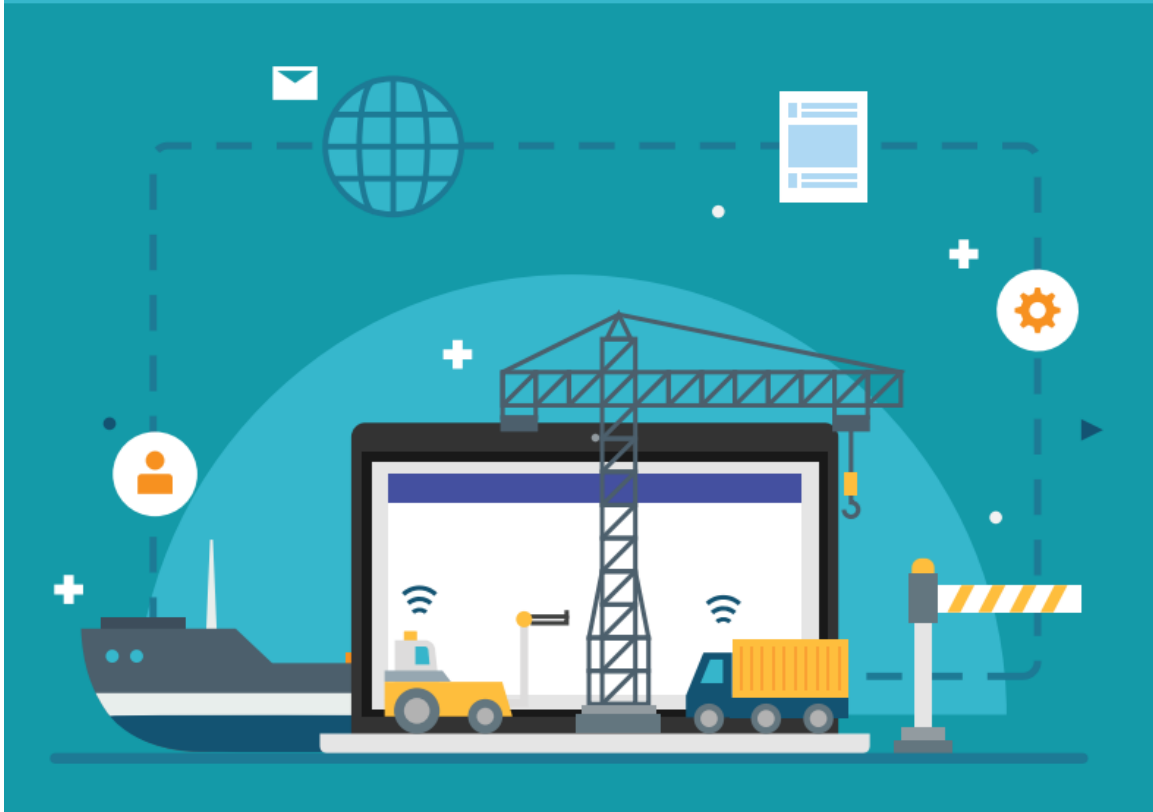
Diverse Technology Support



Traceability & Visibility



# MASTER TERMINAL FOR MIXED CARGO PORTS



Solutions need

## Flexibility & Adaptability

- Terminal business changes over time
- Flexibility to easily configure and adapt business rules & invoicing
- Configuration challenges - standard configurations vs customized ones
  - Trade-offs to consider
- Deployment options changing

Solutions need

# Technology Support

- Integration with devices
- Gate Kiosks & Self Service for GC
- Delivery Orders & Appointments
- Integration with internal & external systems
- Customer Defined EDI





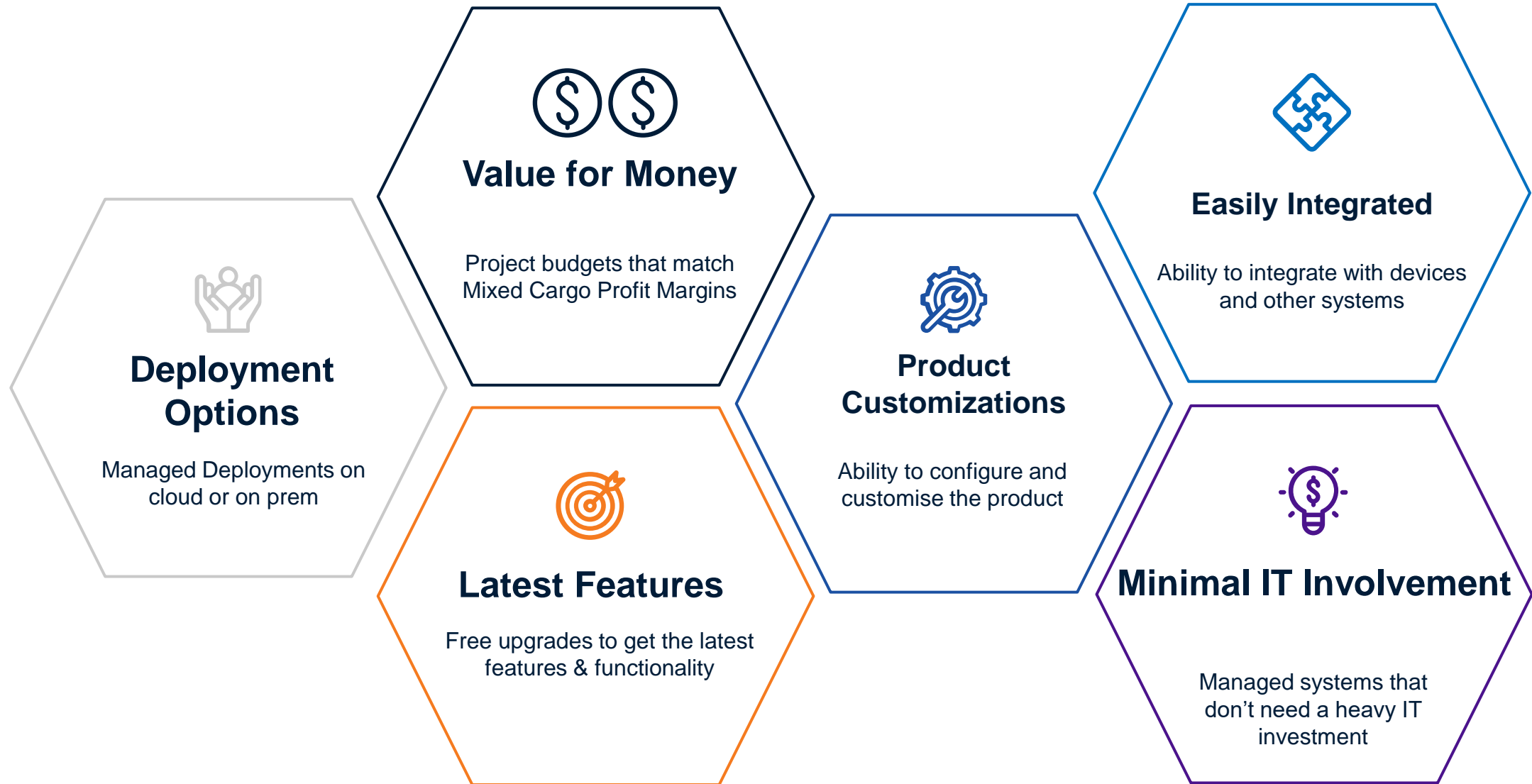
Solutions need

# Traceability & Visibility

- Ability to identify and trace General Cargo
- Provide visibility to different stakeholders
- Granular invoicing capabilities



# Mixed Cargo TOS Solutions

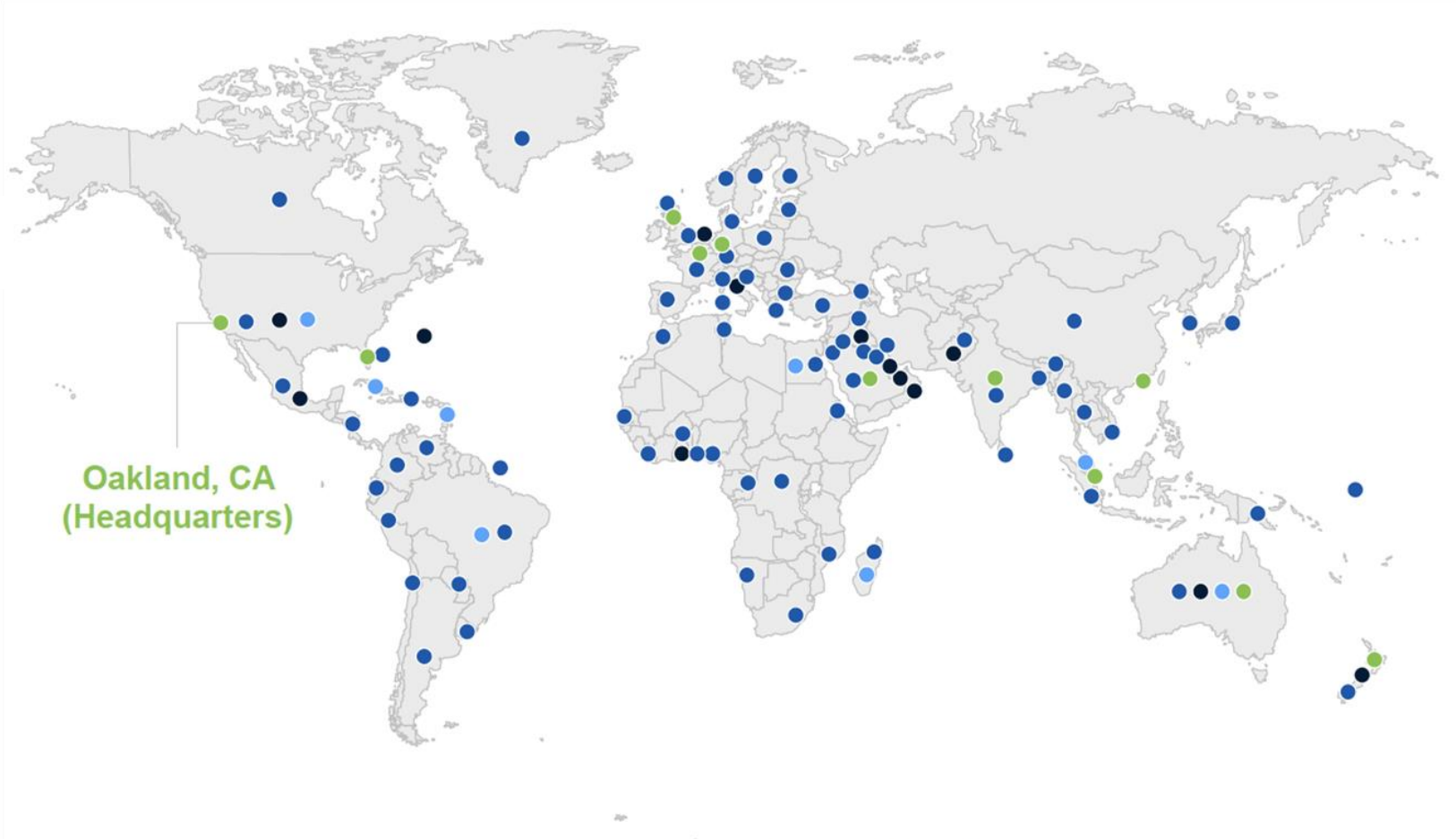


# Navis is the Partner of Choice for Clients Across the Globe



Making global trade smarter, safer, and more sustainable for everyone




- ~460** terminals in **80+** countries
- ~340** Vessel carriers and owners
- +40%** Estimated share of world container throughput market
- 23** Offices Globally
- 600+** Employees
- 24/7/365** Customer support



Projects Running with Navis Software:

- N4
- Master Terminal by Navis
- Octopi by Navis
- Primary Office Location

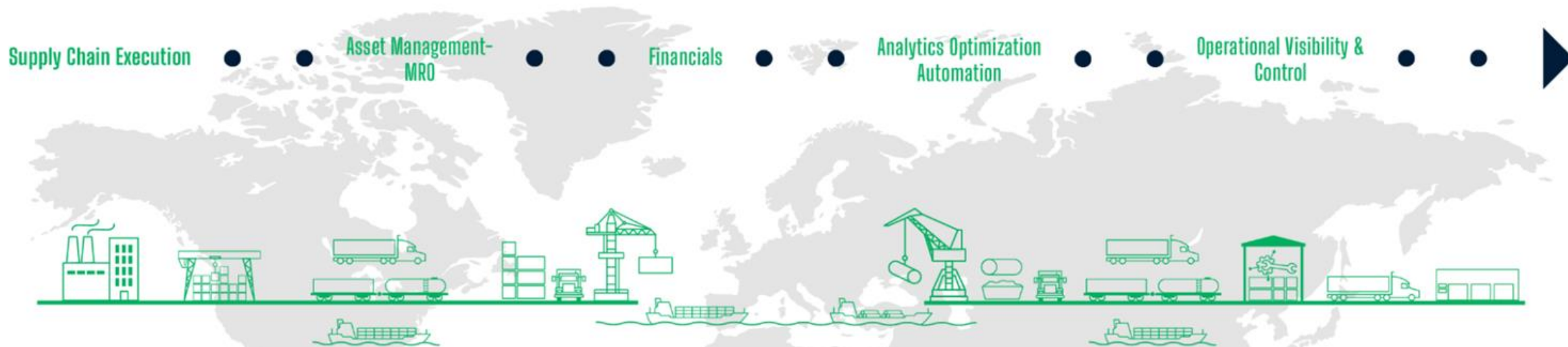
## Leading Automation Solutions

-  Terminal Solutions
-  Carrier & Vessel Solutions
-  Inland Solutions



# Every Move Matters

Addressing All Players in the Supply Chain



**TOS**

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Maritime TOS  
Inland Depot TOS

**CVS**

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Stowage Planning  
Loading Computer  
Fleet Performance & Emission Compliance

**YMS**

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YMS  
RT & Inyard Location  
Enterprise Yard Visibility

**TMS/MRO**

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Railcar Management  
Yard Transportation  
Truck management  
Repair Mgmt & billing

**EVP**

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Visibility APIs  
Visibility & Execution Apps  
Asset Tracking  
Analytics

# Connected Supply Chain



**Terminals need to...**



**Replace Website Scraping with APIs**



**Middleware integration layer**

**Monetize Terminal Data via APIs**



**Feed TOS Operational data to a data lake**

**Data Extraction via API independent of TOS version**



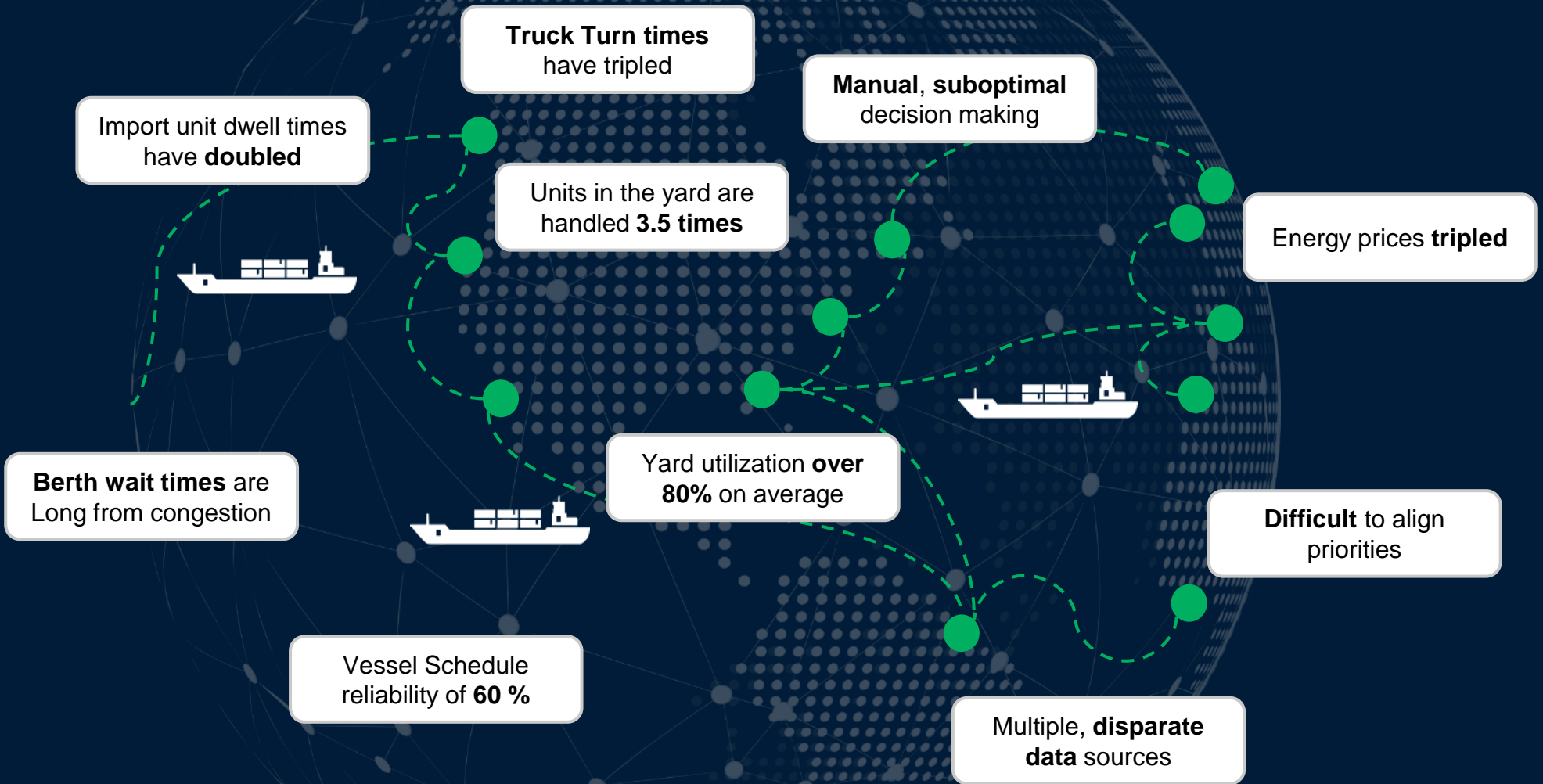
**Better integrate with a complex system (ie. Port community System, customs, BI)**



**Connect multiple systems in the supply chain (ie. N4, MTN, YMS, Octopi, etc.)**



# Supply Chain Efficiency Opportunities



# Thank You

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**Lev Aispur**  
[Lev.Aispur@kaleris.com](mailto:Lev.Aispur@kaleris.com)