KALERIS

Navigating the Future of Container Terminal Automation: Optimizing Efficiency through Cutting-Edge Innovation
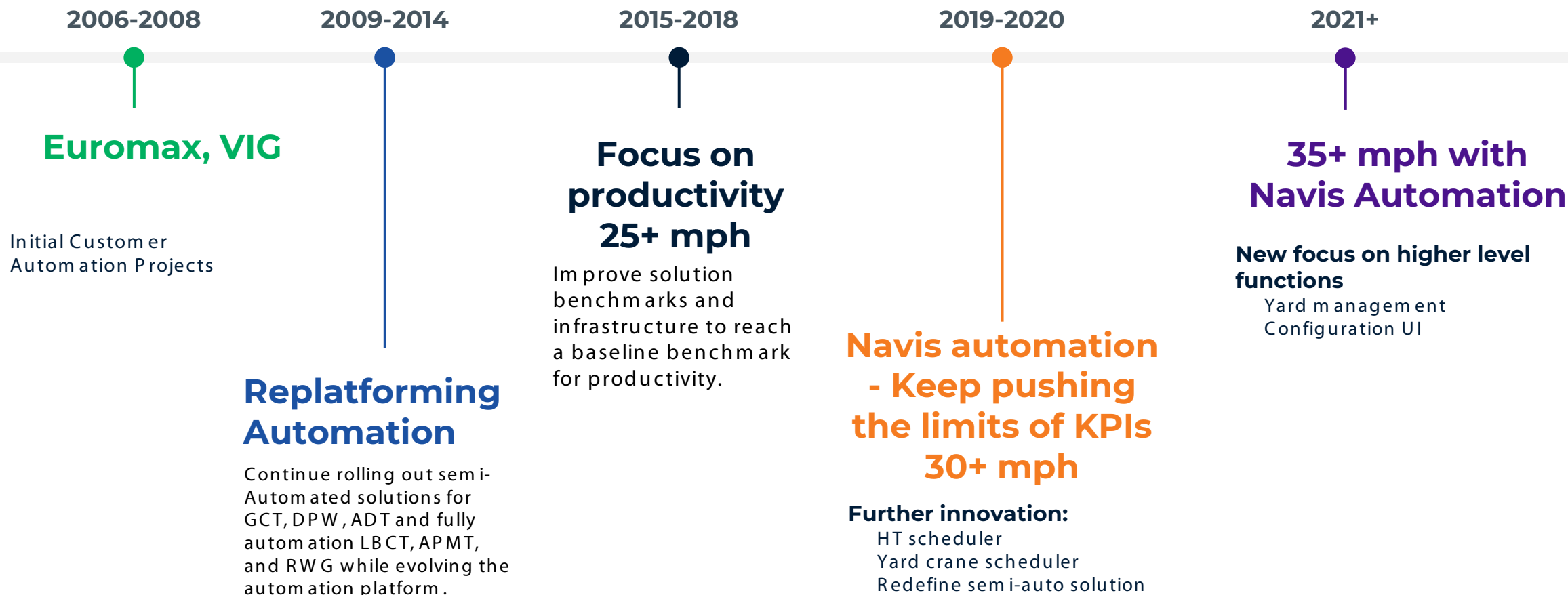

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The Navis Automation Evolution

2006-2008

Euromax, VIG

Initial Customer
Automation Projects

2009-2014

Replatforming Automation

Continue rolling out semi-Automated solutions for GCT, DPW, ADT and fully automation LBCT, APMT, and RWG while evolving the automation platform.

2015-2018

Focus on productivity 25+ mph

Improve solution benchmarks and infrastructure to reach a baseline benchmark for productivity.

2019-2020

Navis automation - Keep pushing the limits of KPIs 30+ mph

Further innovation:
HT scheduler
Yard crane scheduler
Redefine semi-auto solution

2021+

35+ mph with Navis Automation

New focus on higher level functions
Yard management
Configuration UI

VIG goes live with N4

This month, the Port of Virginia has gone live with Navis N4 TOS at Virginia International Gateway Terminals (VIG).

Moving VIG to N4 is the en[...]
Port Authority (VPA). It first [...]
barge terminal in 2012, and [...]
(NIT) in 2014, when it went [...]
changeover after a two-yea[...]

VIG is a different propositio[...]
fact, one of the first termina[...]
it was initially developed. D[...]
VPA reports the changeove[...]
changeover to the Navis N4 [...]
late Friday [11 May] evening[...]
data migration process beg[...]
vessel operations were put [...]
7am Saturday, and closed a[...]
schedule. Rail, barge and v[...]
system at 7am, as planned.[...]

John Reinhart, CEO and ex[...]
service interruptions. The p[...]
are in the stage of addressi[...]
our other terminals, and we[...]

N4 is not the only major cha[...]
in March at NIT. A start date[...]

At the same time, VIG is in [...]
blocks will be brought into c[...]
investment" in expansion. V[...]

Another terminal using Kon[...]
Terminal, has this month su[...]
smoothest implementations[...]

Abu Dhabi Te[...]
Bolsters Auto[...]
N4 Update

May 24, 2018

By Port Technology Team

Khalifa Port Container Terminal. Image co[...]

Abu Dhabi Terminals (ADT)[...]
its TOS to the latest version[...]
bolster its automation capa[...]

ADT manages and operates the Khalifa Port[...]
automated container terminal in the Middl[...]
which handles 1.6 million TEU annually — s[...]
Dhabi market and a significant hub for regi[...]

The terminal successfully migrated to N4 in[...]
system to execute its plans for the next leve[...]
improvements.

WorldCargo

Abu Dhabi Terminals achieves major safety and productivity milestones

Since its inception in 2006, Abu Dhabi Terminals has consistently expanded its capabilities and maintained year-on-year growth.

by **Karim Tolba** | May 16, 2023 04:50 PM GST   SHARE

Abu Dhabi Terminals achieves major safety and productivity milestones

Abu Dhabi Terminals (ADT), the primary operator of all commercial ports in Abu Dhabi jointly owned by Abu Dhabi Ports and Terminals Investment Limited (TIL), has achieved significant milestones in maintaining a safe and

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Er wordt hard gewerkt voor onze klanten om de productiviteit op een duurzame [...]

Logistics

Marked milestones

Abu Dhabi Terminals announced on Tuesday it exceeded 10 million man-hours without Lost Time Injury (LTI), highlighting its commitment to a zero-accident work environment.

Moreover, ADT has achieved a new milestone by handling 20 million twenty-foot equivalent units (TEU) containers since its establishment in 2006, with a notable 22% improvement in throughput compared to the preceding year.

Steady growth

Since the inauguration of Khalifa Port Container Terminal (KPCT), the region's first semi-automated port in 2012, the operator has been consistently expanding its capabilities and maintaining year-on-year growth

"These milestones represent another great achievement by the entire team which truly emphasises that Abu Dhabi Terminals continues to be a leading semi-automated container terminal operator in the world. It is a testament to ADT's vision, mission, and values that the investments and partnerships with key stakeholders continually improve and expand our capabilities and show tremendous results," ADT's acting CEO, Robert Sierserna said, adding that the operator is committed to efficiently serving its customers and will continue to strive to exceed their expectations.

ADT supports local markets by offering over 25 weekly container line services to more than 75 global destinations, offering the ideal hub for connecting local trade with an extensive global logistics network.
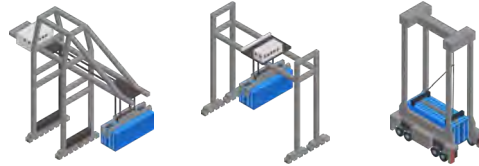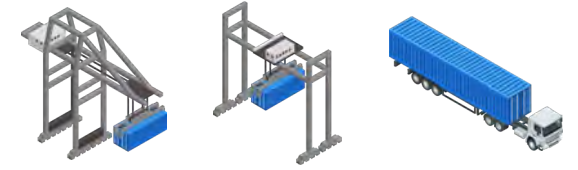
N4 - TOS Leader in Terminal Automation
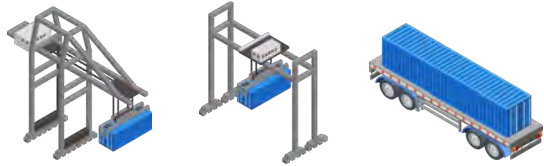
Full Automation ASC - AGV
- QC Automation
- **A**utomated **S**tacking **C**rane
- **A**utomated **G**uided **V**ehicle

Full Automation ASC - ASh
- QC Automation
- **A**utomated **S**tacking **C**rane
- **A**utomated **Sh**uttle

Semi Automation ARTG/C-ARMG - TT
- QC Automation
- **C**antilever **ASC**
- **C**antilever **ARMG**
- Manned **T**erminal **T**ractor

Full Automation Auto Trucks
- QC Automation
- Auto RTG/C-ARMG
- Auto **T**erminal **T**ractor

Full Automation Auto Strads
- QC Automation
- **A**uto Straddle Carrier
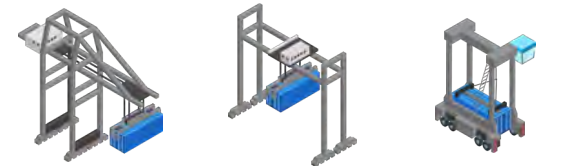
Semi Automation ASC - ShC
- QC Automation
- **A**utomated **S**tacking **C**rane
- **Sh**uttle Carrier

Automation Adoption
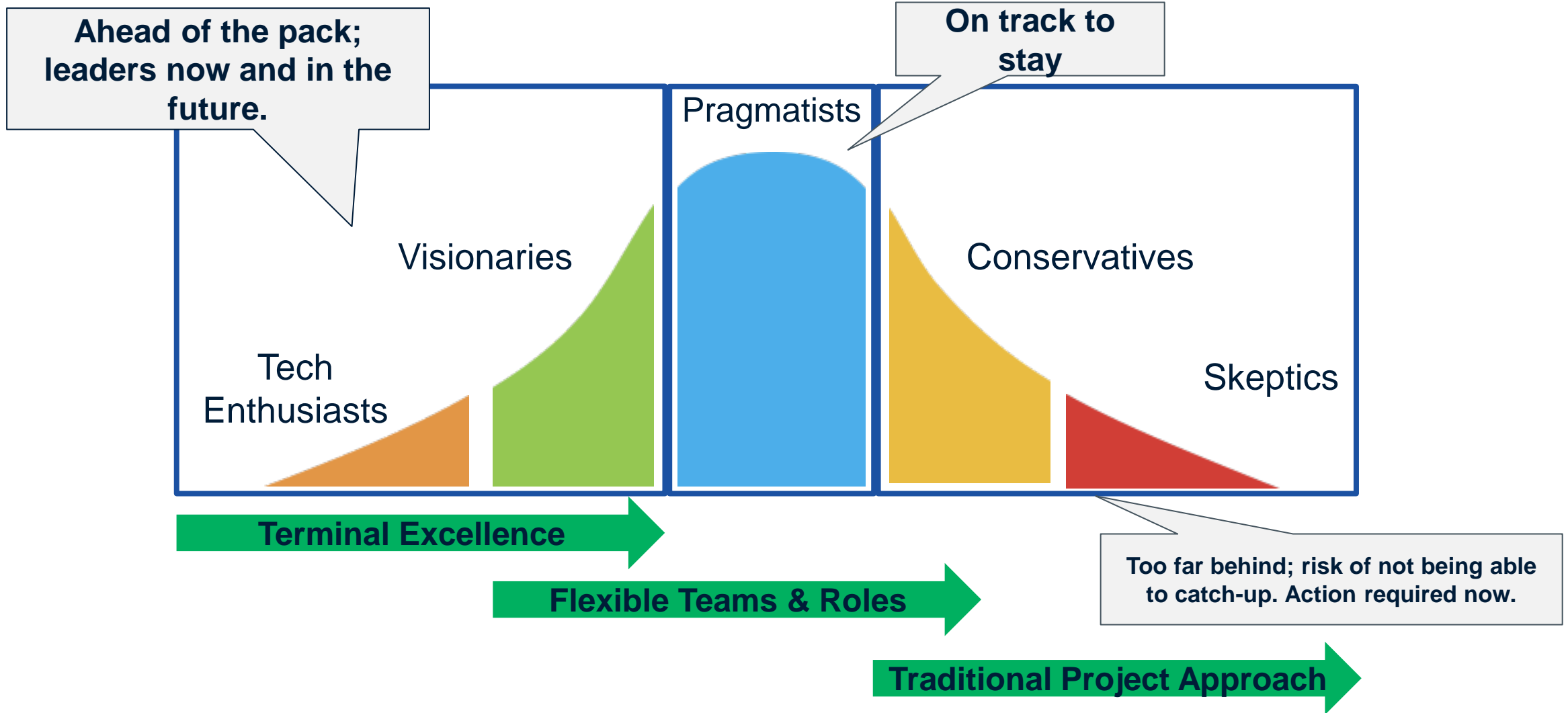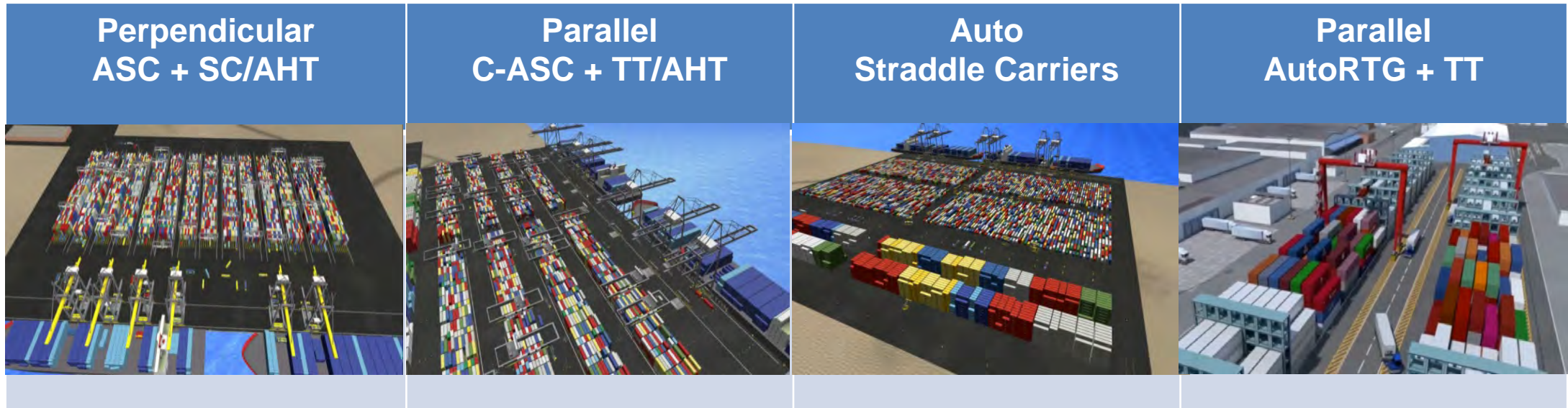
Evolution of Automation - Brownfield & Retrofit

AGV

Truck to AutoTruck

Shuttle to AutoShuttle

Straddle to AutoStrad

Operational Layouts

Perpendicular ASC + SC/AHT	Parallel C-ASC + TT/AHT	Auto Straddle Carriers	Parallel AutoRTG + TT

N4 supports leading

semi-automated and fully-automated layouts

Automation Pillars

Equipment Automation

- Faster time to value
- Simpler and faster implementation
- Stepwise approach

User Experience

- Great visibility
- Holistic operational overview
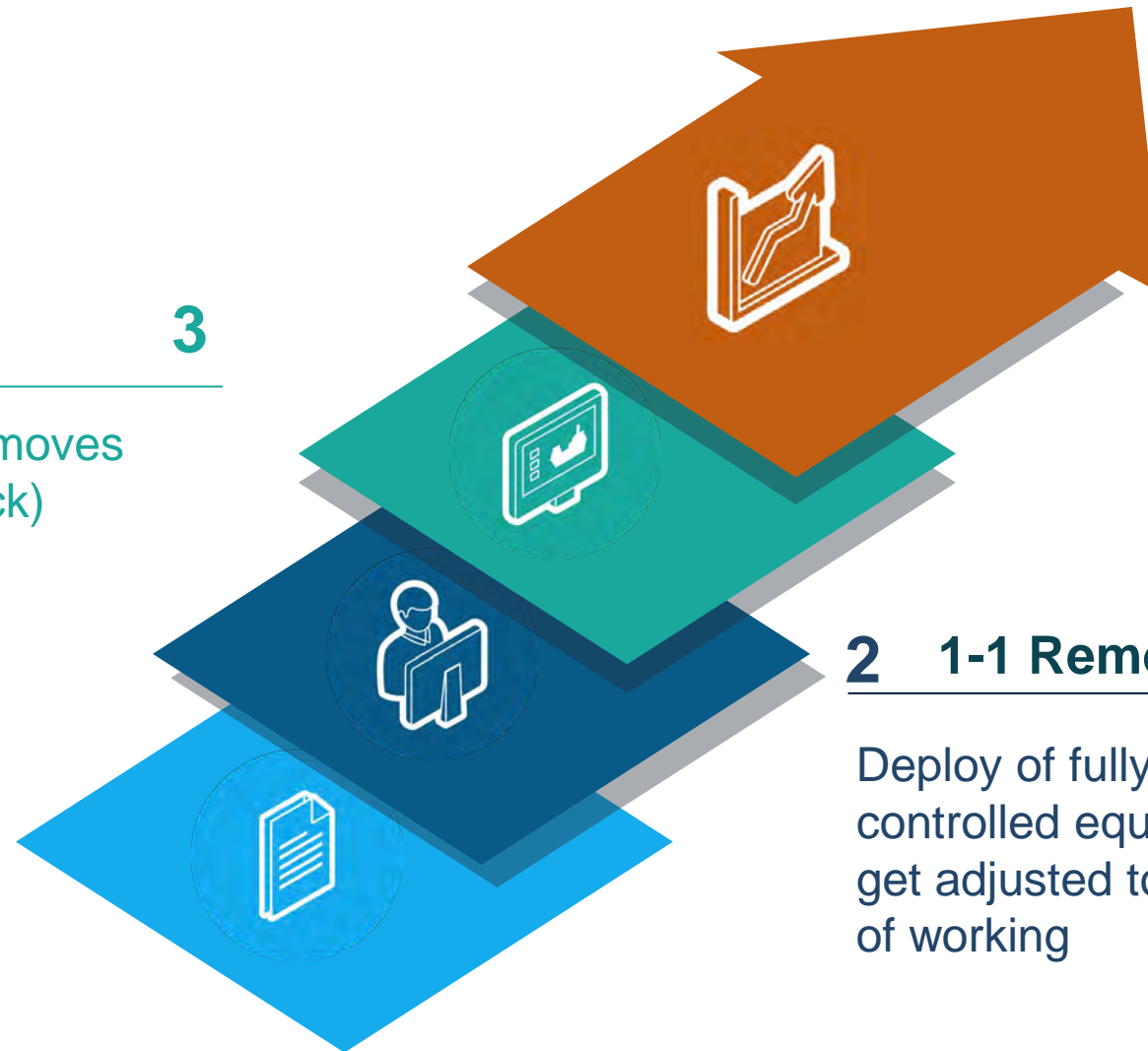- Data driven recommendations

Decision Making

- Quickly respond to changes
- Intelligent end-to-end decision making
- Continuous value improvements

Digital Models

- A digital real-time version of the terminal
- Continuous value improvements
- Predict your demands

Stepwise Approach

Process Automation 1

Focus on automating existing processes

2 1-1 Remote Control

Deploy of fully remote controlled equipment to get adjusted to new way of working

Initial Roll-Out 3

Initial automated moves (e.g. lift/set in block)

4 Full deployment

Gradually roll-out automation for the full relevant equipment fleet

The Human Factor

Remove variability and repetition

Leverage creativity and people skill set
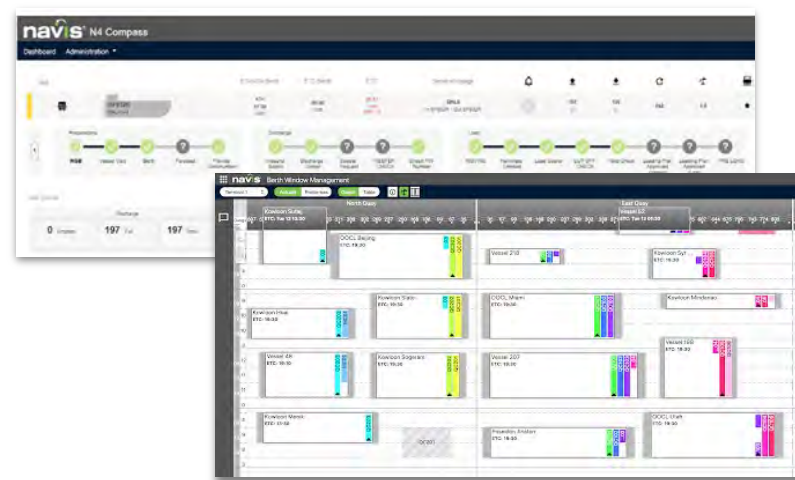
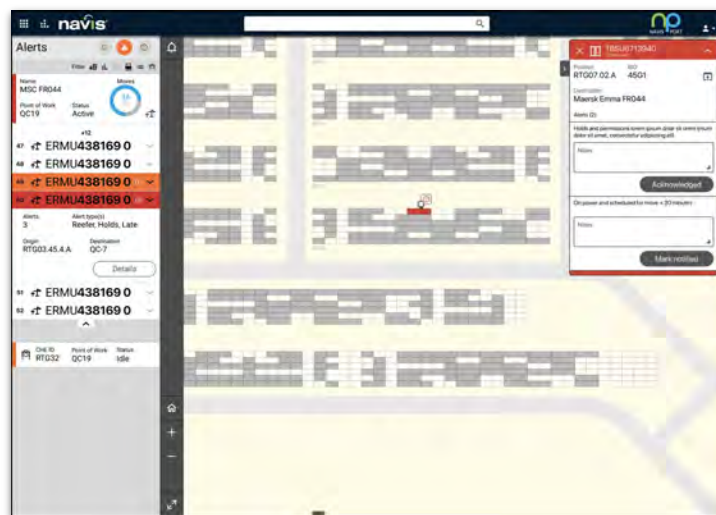**Focus on a proactive way of working**

User Experience & Decision Making

Stay ahead of the curve by **switching from focusing solely deeply technical functions** (e.g., scheduling or equipment integration) to putting more emphasis on **higher level functions**
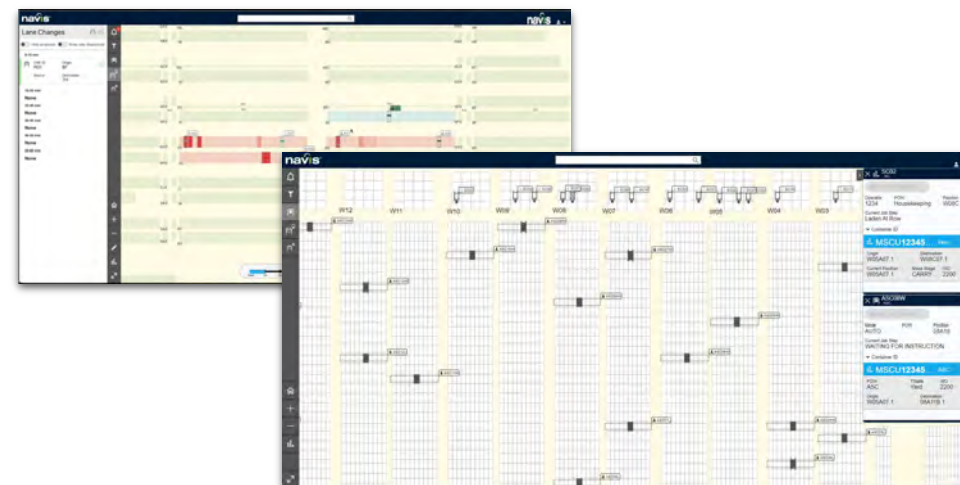
Goal: give users a **macrovision on operations**

Provide clear insights what the algorithm is doing and why

Alerts to promote proactiveness instead of reactiveness

Tool to manage yard performance

Digital Models to Enable Continuous Optimization

IoT Connectivity

A digital real-time version of the terminal

End to End Optimization

Leverage real-time granular data for terminal-wide integrated and optimized decision making
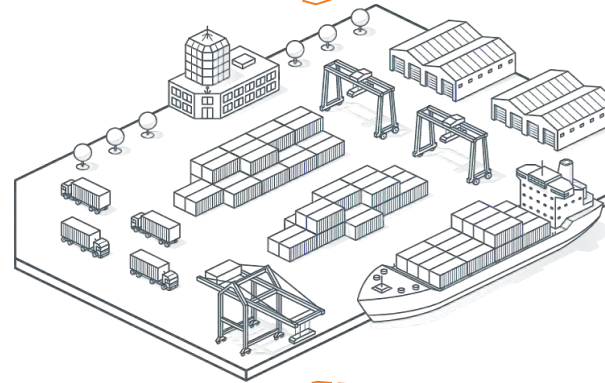
Predictive & Prescriptive

- Historic data & events
- AI-enabled and
- ML-based decision
- Predict future exceptions
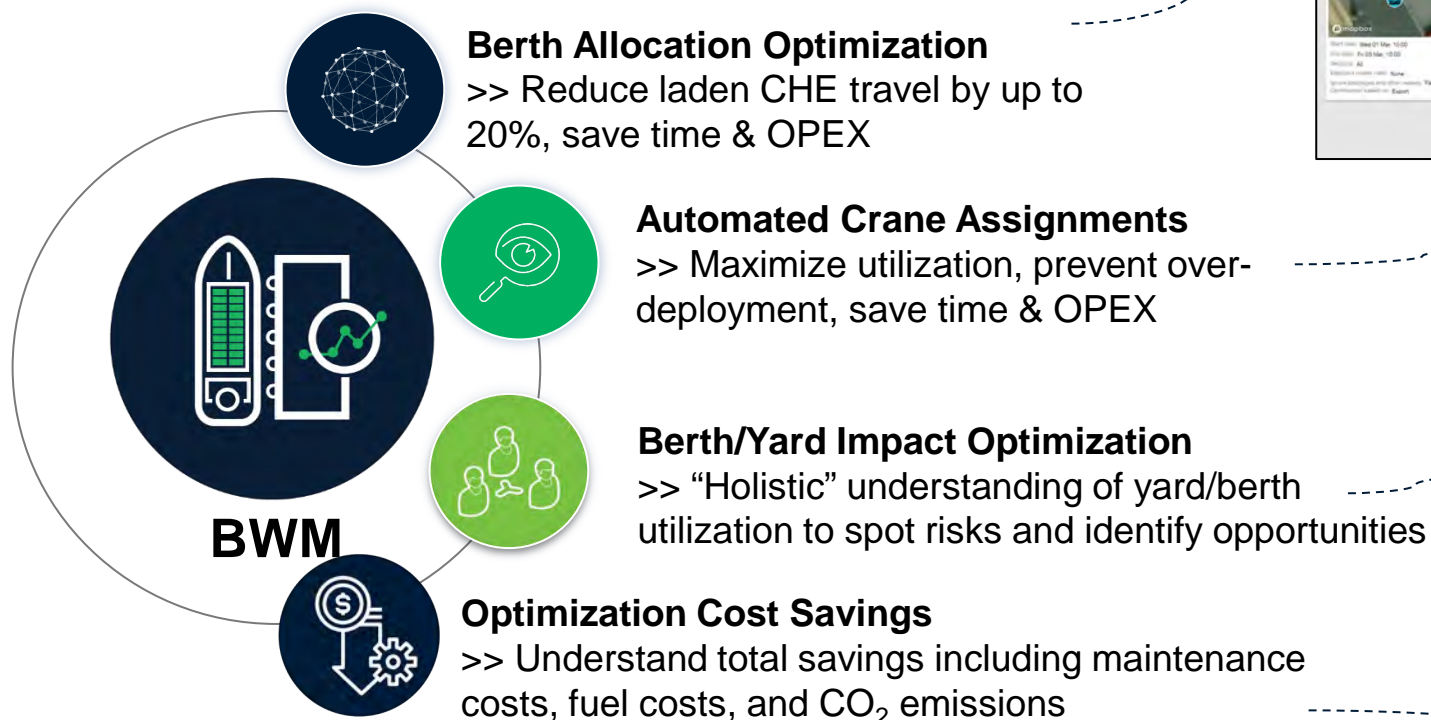- Recommended prescriptions

Virtual Experiments

Run your terminal offline on different scenarios

Predictive and Prescriptive Capabilities

Berth Window Management Example

Berth Allocation Optimization
>> Reduce laden CHE travel by up to 20%, save time & OPEX

Automated Crane Assignments
>> Maximize utilization, prevent over-deployment, save time & OPEX

Berth/Yard Impact Optimization
>> "Holistic" understanding of yard/berth utilization to spot risks and identify opportunities

Optimization Cost Savings
>> Understand total savings including maintenance costs, fuel costs, and CO_2 emissions

BWM

Optimization Suite

Configuration Made Easy

Wizard-based configuration dashboard to set specific operational goals

Control Room Experience

Holistic operational overview for Dispatcher users providing context and exception detection capabilities

Optimization Engine

Automated optimized decision making for automated/manned equipment, taking into account key information and the actual state of the yard as well as user input

Operators Experience

Solution for equipment operators that gives them a real-time view of their current and upcoming work

Blueprint

Jump start implementations and reduce risk with a baseline system, operational configuration settings, and reference data

Data Driven

Real-time KPI dashboards for monitoring terminal operations and predict demand and bottlenecks
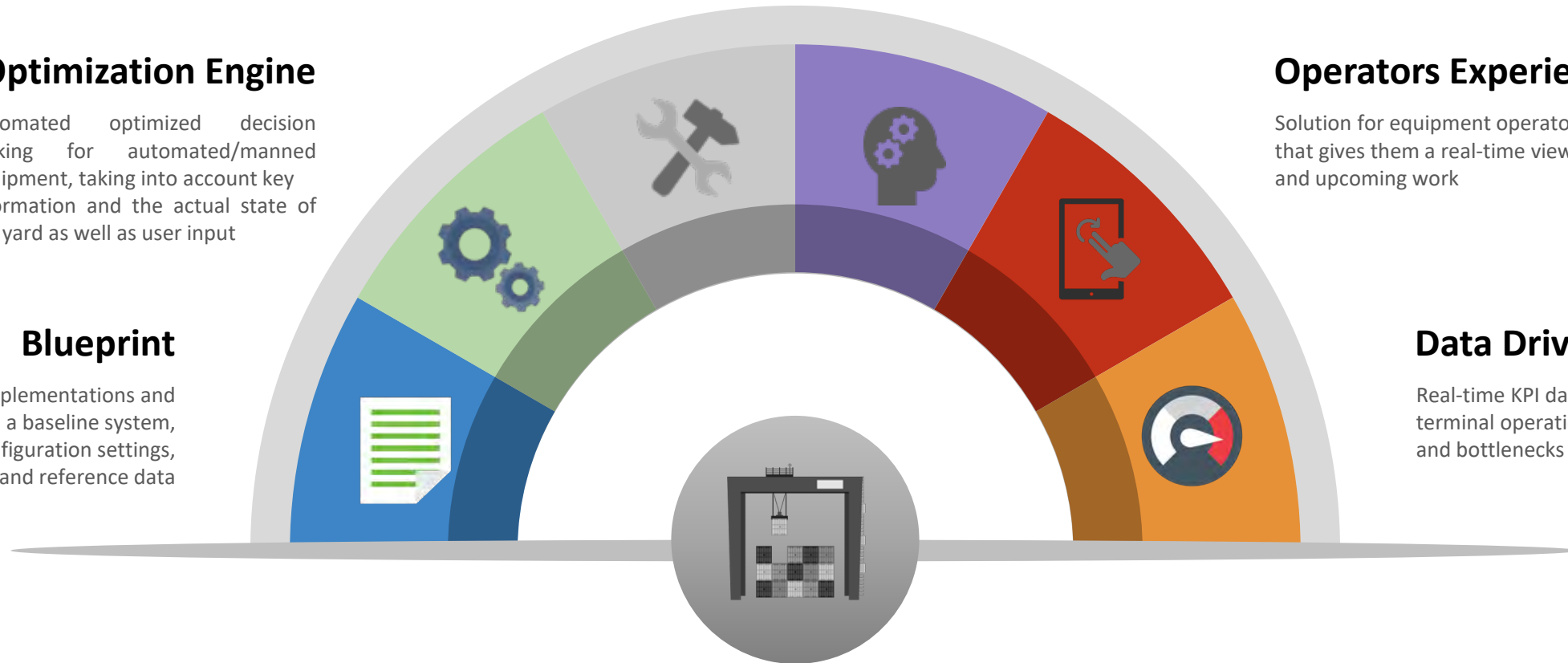
Why Navis Automation?

Proven Turnkey Solution

- Over 30 implementations around the world
- Partnerships with all the main equipment providers in the industry
- Standard EC S Integration
- Equipment Agnostic
- Scalable and Robust Platform for all types of automated equipment

Accelerated Best of Class ROIs

- Effective decision-making capabilities
- Unique user experience
- Data Driven
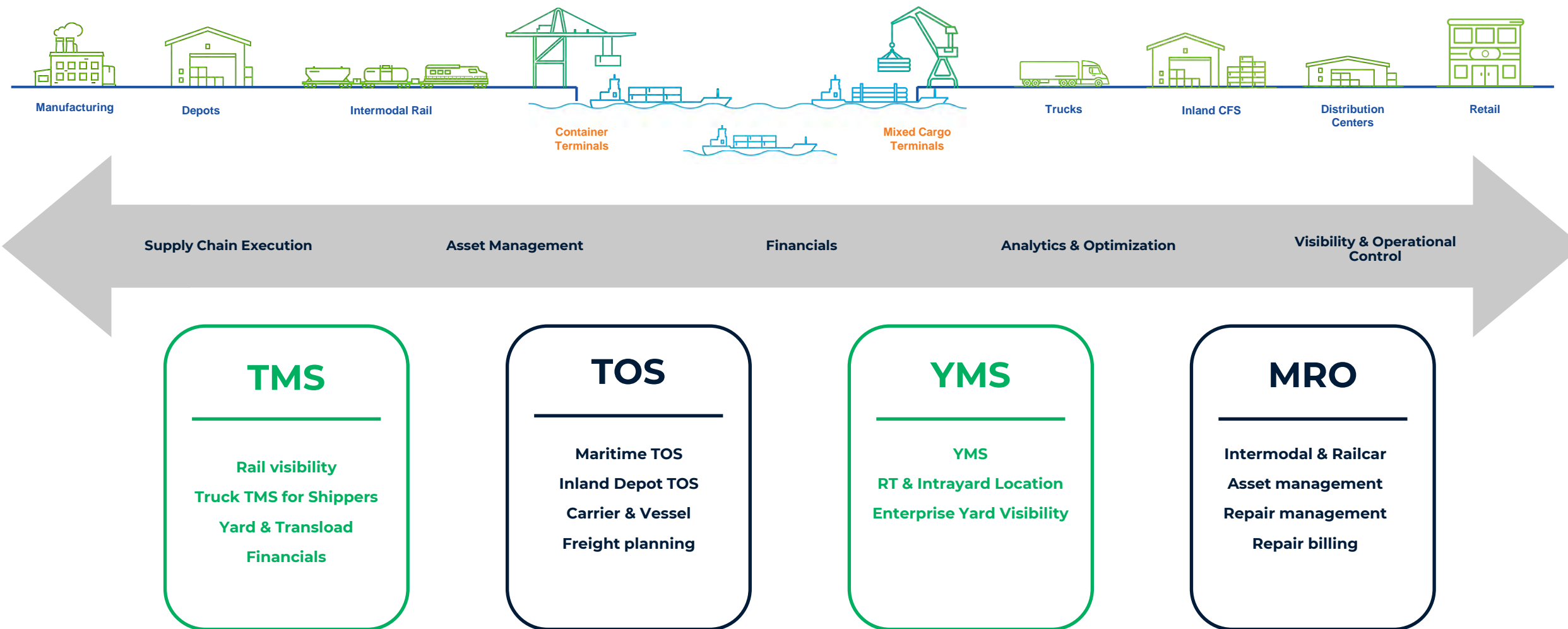- Brownfield Automation

Protecting your Business

- Navis has been committed to Automation for over 30 years
- Continuous Innovation
- Ready to scale with the expansion of your portfolio
- A partnership designed around our customers success

Every Move Matters
Addressing All Players in the Supply Chain

Manufacturing · Depots · Intermodal Rail · Container Terminals · Mixed Cargo Terminals · Trucks · Inland CFS · Distribution Centers · Retail

Supply Chain Execution · Asset Management · Financials · Analytics & Optimization · Visibility & Operational Control

TMS

Rail visibility
Truck TMS for Shippers
Yard & Transload
Financials

TOS

Maritime TOS
Inland Depot TOS
Carrier & Vessel
Freight planning

YMS

YMS
RT & Intrayard Location
Enterprise Yard Visibility

MRO

Intermodal & Railcar
Asset management
Repair management
Repair billing

REAL-TIME. PRECISE. IMMEDIATE VALUE.

"It helped us reduce our search time from 90 minutes to 5."

It's a powerful tool to track, map, and locate assets in real-time.

Example shown: Automotive yard gains visibility of vehicles from assembly to dealers with RFID

Thank You

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