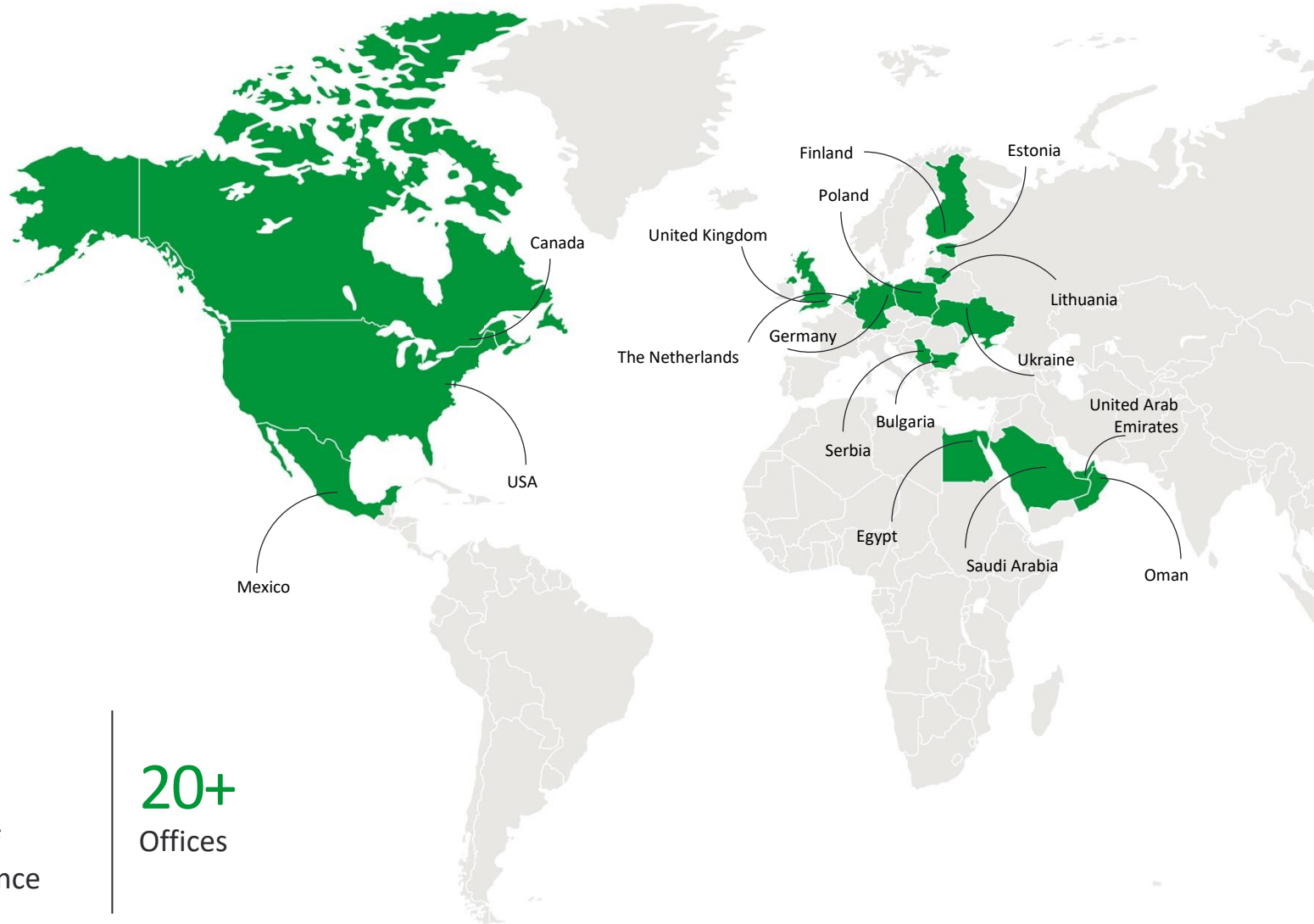# Case Study

Smart Port at Port of Tallinn

Kadri Haufe

Nortal is a digital transformation powerhouse

- Software solutions
- Project management
- Business consulting
- Service design
- Change management

200M€+
Revenue globally

2000+
Experts worldwide

20+
Years of experience

20+
Offices

We are the main architects of e-Estonia

40%

of the Estonian e-transformation delivered by Nortal

Over 20 years of experience with port & ferry digitalization.

PORT OF ⚓ TALLINN | TALLINK | VIKING LINE | ECKERÖ LINE | TS LAEVAD | STEVECO | Brittany Ferries

Digital technologies are essential for sustainable transformation, and businesses are investing heavily in these solutions to achieve their sustainability goals.

93%
of CEOs believe that digital transformation is essential to achieving their sustainability goals.

80%
of businesses have already invested in digital technologies to support their sustainability efforts.

20%
reduction in global GHG emissions is possible with the use of digital technologies.

113 mln
new jobs can be created with help of digital technologies by 2030.

Sources: (Accenture, 2022); (IBM, 2023); (World Economic Forum, 2022); (International Labour Organization, 2021)

Smart Port projects combine benefits related to efficiency, customer & user experience, AND sustainability.

Ferry operators

Efficient terminal operations

E.g. 75% of FTEs saved on check-in and marshalling in POT; with additional potential.
Loading efficiency.
Easier to cope with seasonality.

Recover lost revenue

From correct classification of vehicles, number of passengers & long-term trailer parking.

Great customer experience

Terminal experience influences everything else on board!
NPS increase from 40 to 78 at TS Laevad.

Port authorities

Optimal use of land

Ferry operations can be accomplished from less m2.
Several operators in same terminal, less space needed for check-in etc.

Additional departures

Port enables efficient operations – attractive for new departures.
Additional departures can be added at unmanned hours.

Improved sustainability

Reducing congestion, idling in the port, and supporting fast turnaround of vessels in ports.

Access to accurate real time data

Opportunity for further operational improvements, supply chain efficiency and intermodal integrations.

POT's Smart Port covers all aspects of ferry terminal operations with possibility for full-scale automation and most advanced data orchestration

SMART PORT terminal operating system
provides a comprehensive, accurate, real-time data overview of terminal operations.

Ro-pax & trucks

- Automatic data gathering
  (incl. dimensions, weight, number of PAX, mark & model of vehicle, origin country etc.)
- Automatic check-in
- Exception handling
- Self-service options
- Automatic classification
- Automatic marshalling
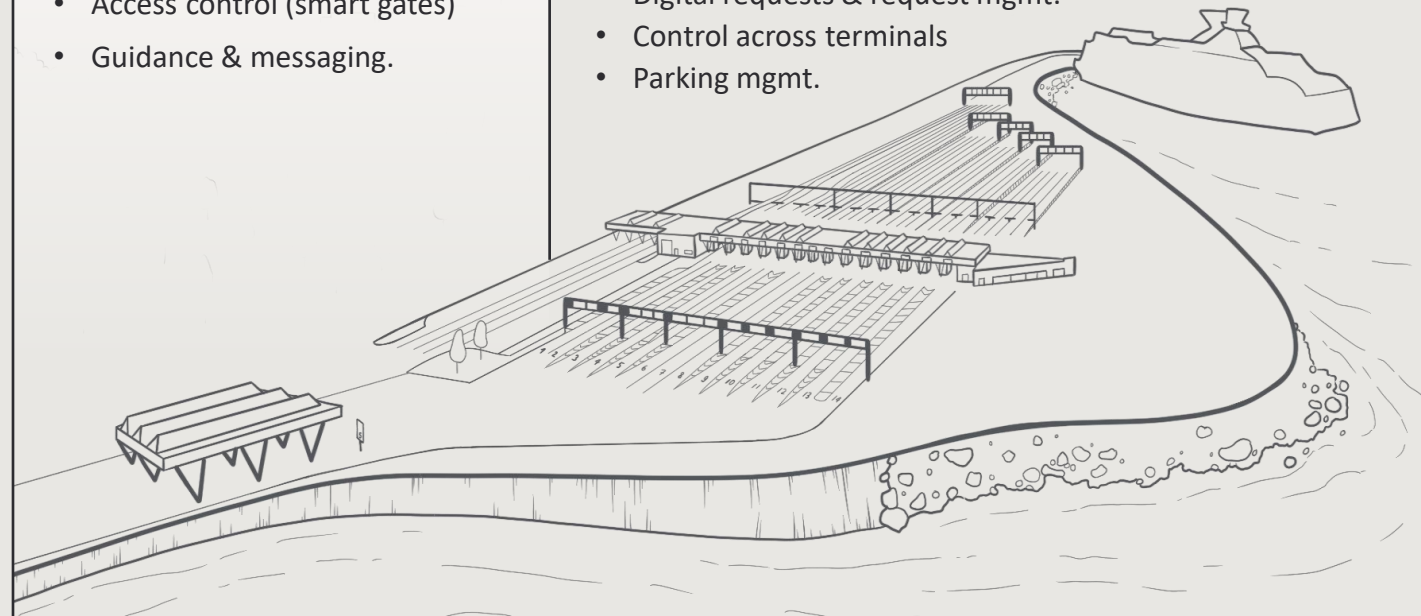- Digitally assisted loading.

Drop trailers

- Access control & digital gate in
- Damage control
- Yard inventory mgmt.
- Manage long-term trailers
- Optimization of loading & work planning
- Validation at gate out.

Foot-pax

- Digital check-in
- Access control (smart gates)
- Guidance & messaging.

Employees & contractors

- Temporary & permanent permits
- Digital requests & request mgmt.
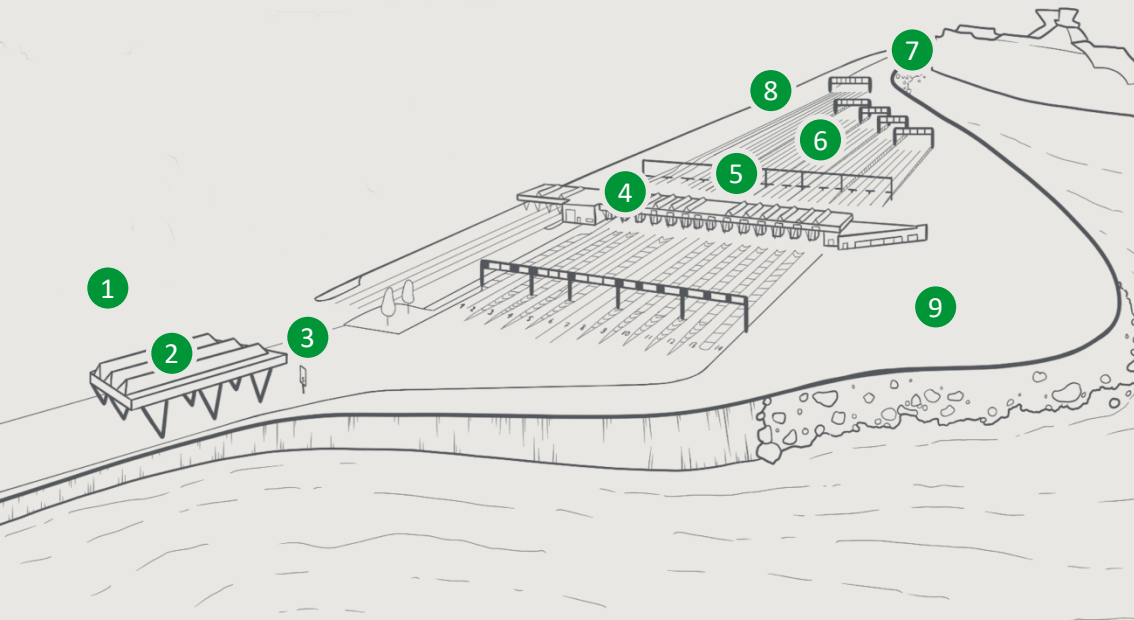- Control across terminals
- Parking mgmt.

Ro-pax & trucks

Terminal automation

The Smart Port solution provides a holistic view of terminal operations to support every team's unique needs.

1. Before the departure

Prepare the terminal gathering area layout (digitally) based on arriving vehicles.

2. Pre-gate

Identify vehicles and gather all relevant data to enable automatic processing, safety & security, and revenue mgmt.

3. Driving directions

Get the travelers attention and start the smooth, efficient and safe traffic guidance with personalized directions.

4. Check-in area

Provide access to the restricted loading/gathering area and direct drivers to the correct lane for loading.

5. Lock area

Provides orderly and safe passage to the correct marshalling area lane for drivers.

6. Digital marshalling

Automatically gather all vehicles per loading allocation types and prepare for loading.

7. Loading

Load vehicles onto the ferries in an efficient, safe and clear manner – with perfect overview of status (digital twin).

8. Unloading

Guide vehicles out of the vessel and terminal – processes aligned with border guard and customs for needed checks.
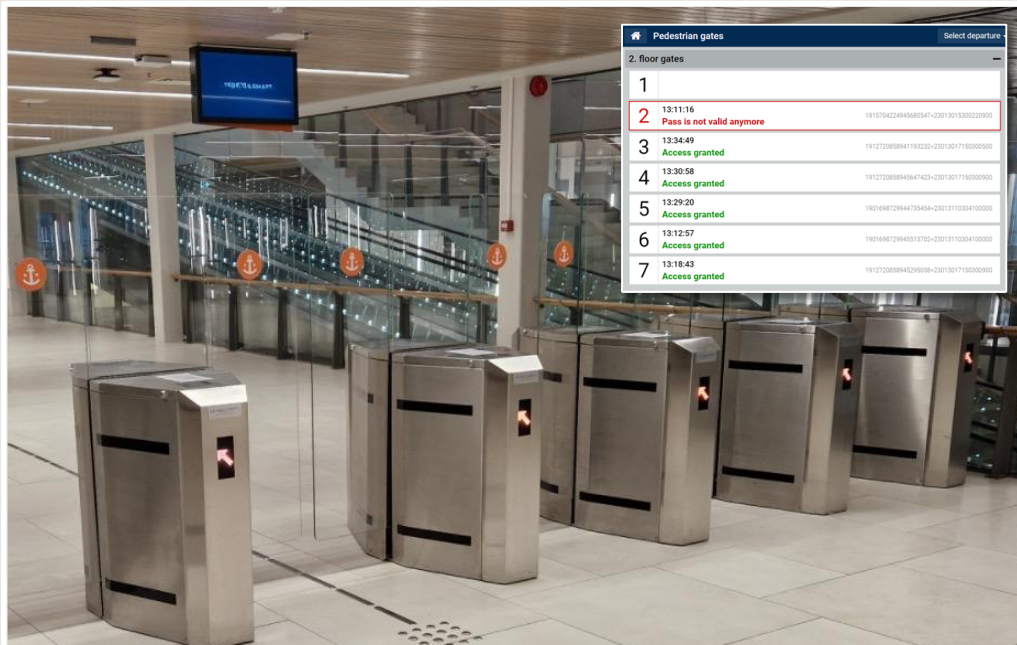
9. Add-on solutions

Build revenue growing or customer experience improving features on top of the standard process.

Foot-pax

The Foot-PAX solution allows for automatic passenger registering and smooth guidance to the vessel.

Functionalities

- Ticket and/or booking check
- Count passengers with speedgates and counting cameras
- Error handling through PDA
- Passenger guidance in terminal
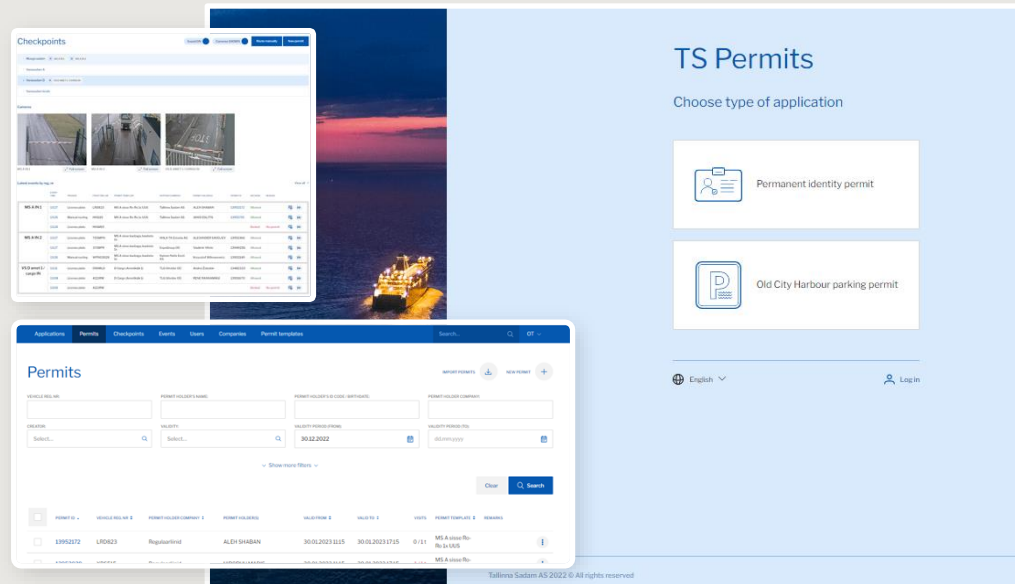- Passenger announcements and messages on screens.

Wow-factors

- Same speedgates can handle multiple operators' passengers
- Multi-tier gate possibilities to better control passenger movement to correct operator and/or departure
- Biometric identification and walkthrough in free flow.

Employees & contractors

The access mgmt. module makes it easy to manage permissions for non-passengers, incl. suppliers, staff, drop-off trailer traffic.

Functionalities

- Control all terminals, entry points' vehicle permits from one place
- Overview of all access gates and actions
- Permit application process for users
- Permit management system for port staff
- Management of several terminals from one system
- Integration with other access control systems (contactless card solutions etc.).

Wow-factors

- Provides single point of data entry from application to confirmation to invoicing to actual permit creation
- Hardware vendor agnostic to keep hardware costs down
- Recorded footage of every entry (entry attempt).
- Easy to understand checkpoints view for security staff
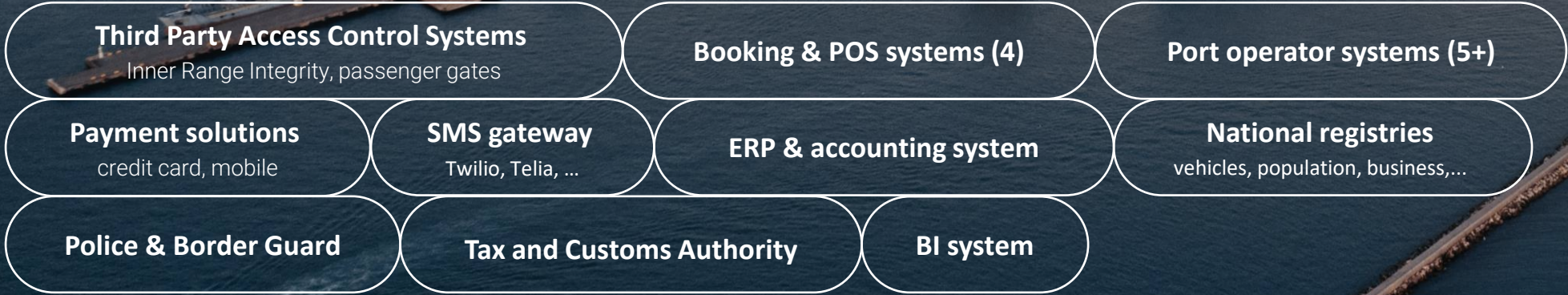
Data is key to twin transformation

Reliable data is required to identify and boost the best interventions, monitor their progress, and support the development of a digital ecosystem.

Steps to take towards collecting and using reliable data:

- Leverage emerging technologies to capture data

- Build accessible data-collection processes

- Tackle underlying issues that prevent data collection, such as connectivity gaps

- Report more frequently and address reporting delays

- Bring together data users and producers to foster data-sharing across stakeholders

The solution includes ready made APIs for ship operators, port area operators, and for government institutions

Third Party Access Control Systems
Inner Range Integrity, passenger gates

Booking & POS systems (4)

Port operator systems (5+)

Payment solutions
credit card, mobile

SMS gateway
Twilio, Telia, …

ERP & accounting system

National registries
vehicles, population, business,…

Police & Border Guard

Tax and Customs Authority

BI system

Thank you

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