

SERVICES: GROWTH THROUGH SOLID CORE FOUNDATION AND SMART SOLUTIONS

**Pierpaolo Barbone,
President, Services & Executive Vice President**

The shift towards clean, efficient and smart vessels

INCREASING REGULATORY PRESSURE

Further investments to retrofit incompliant assets, increased scrapping and newbuilds

NEED FOR EFFICIENCY IMPROVEMENTS

Demand for performance based agreements with shared incentives will increase

THE RISE OF "SMART VESSEL"

Need for total asset management capabilities is set to increase

VERTICAL INTEGRATION AND MARKET CONSOLIDATION

Larger entities as customers more likely to outsource more and focus on their core business

The shift towards a clean, digital and smart energy ecosystem

ERA OF RENEWABLES AND ENERGY STORAGE

Demand for system integration around engine power plants and renewables is set to increase

ROLE OF LNG AS A BRIDGING FUEL

Rising demand for specific expertise and service capability in gas technology

SHIFT IN ENERGY PROVIDERS' BUSINESS MODELS

The need for Asset Management and system integration will increase

ACCELERATING DIGITAL TRANSFORMATION

Growing demand for optimisation of asset operational efficiency, reliability and connectivity

200
Customers served through
online channels

71^{ton}
Spare parts shipped
to customers

800
Installations under
lifecycle solution
agreement

5.000
Field service engineers
at customer sites

>40,000
Vessels operating
with Wärtsilä scope

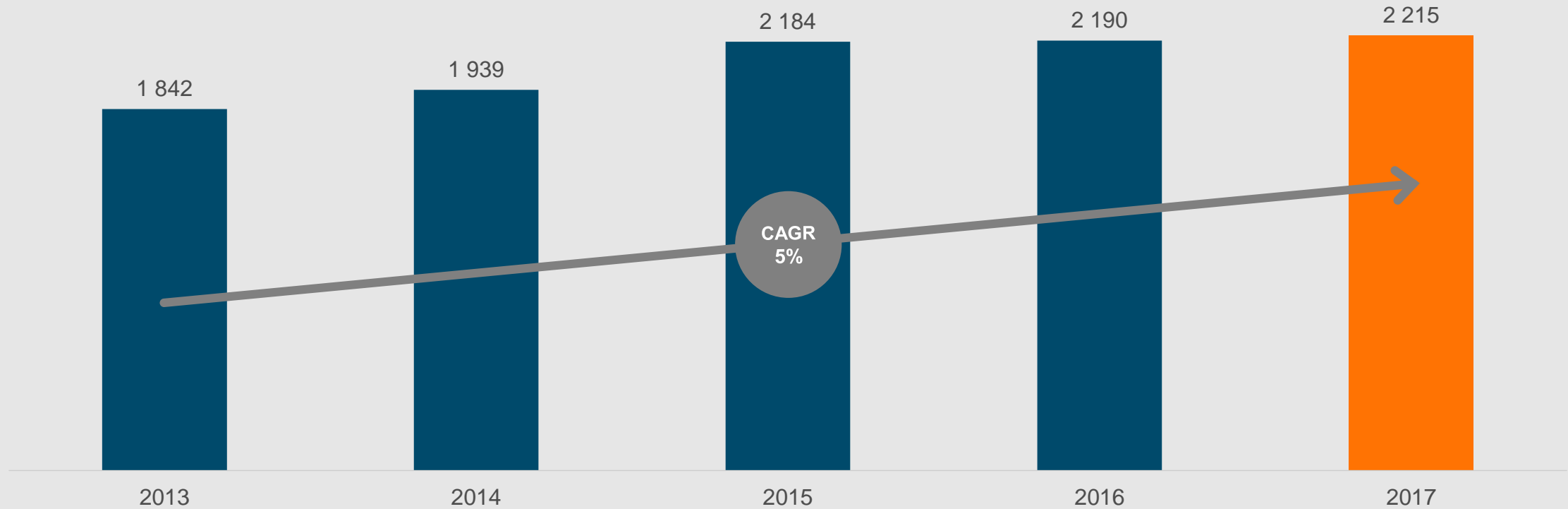
70
Customers served through
24/7 support
centre

2-3
Customer
training courses held

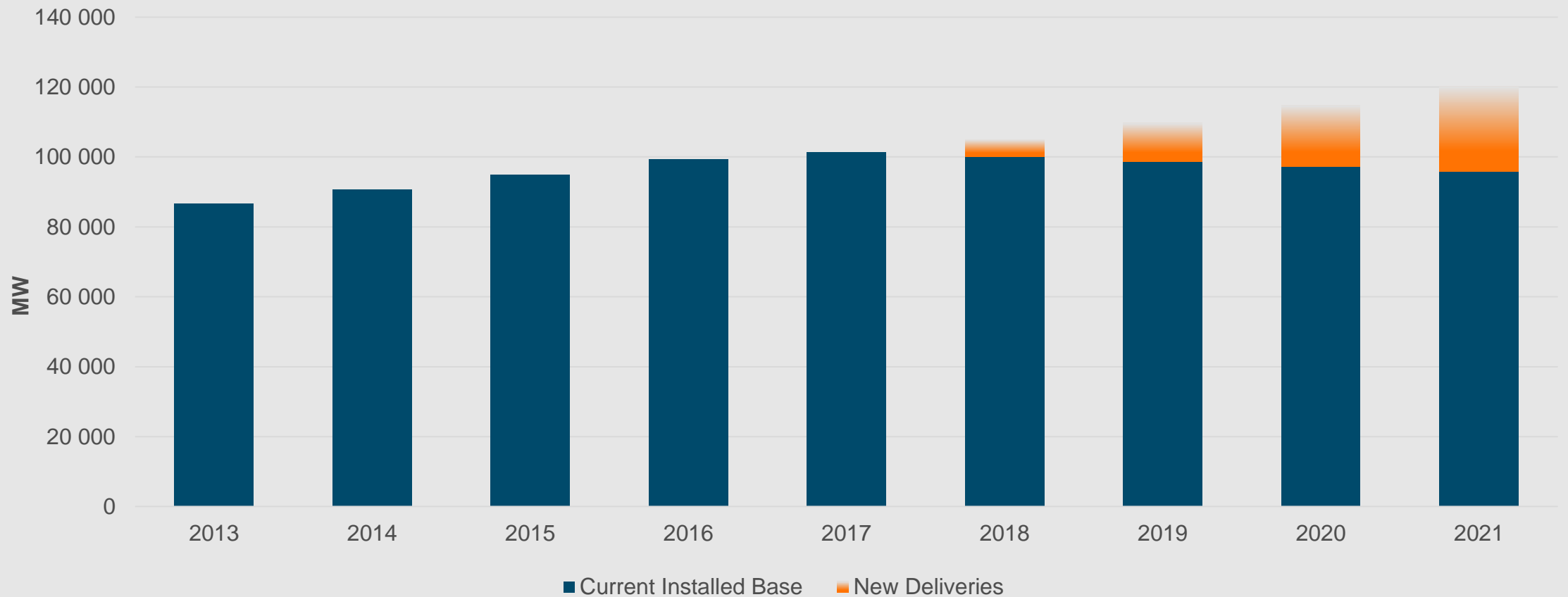
Serving
customers at
160
locations
worldwide

>4,000
Plants operating
with Wärtsilä scope

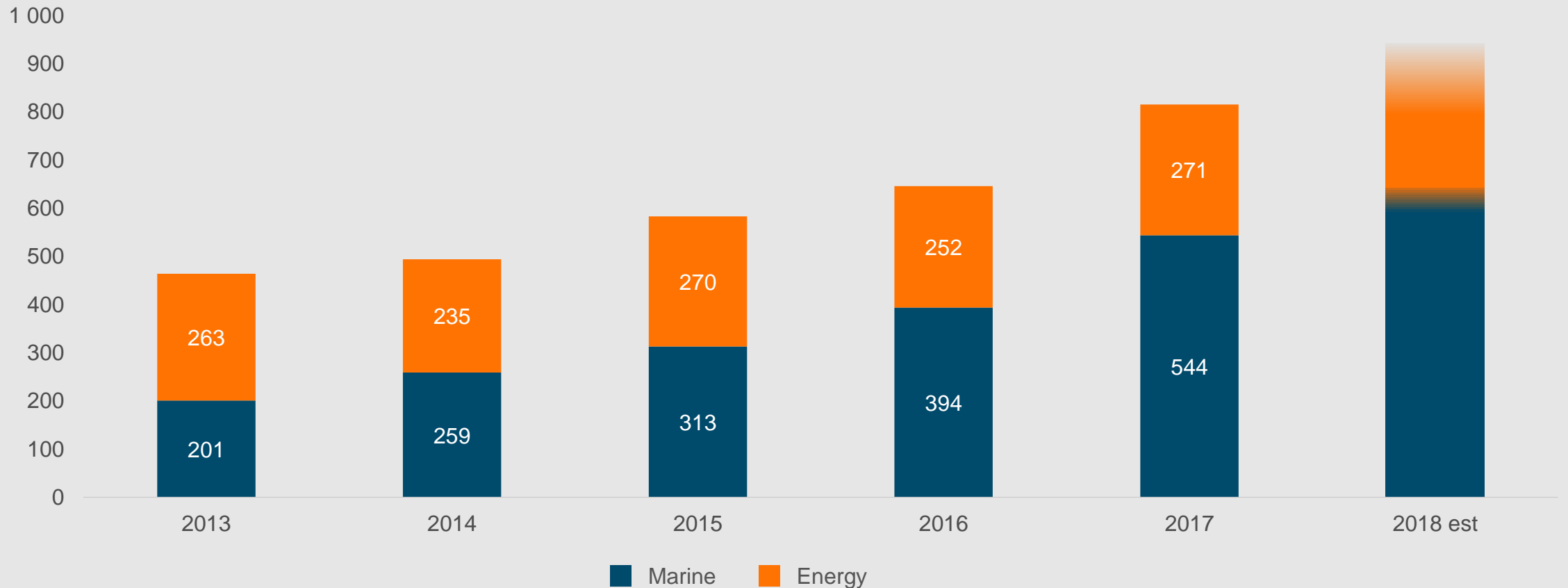
The size and scope of the Services business provide a solid platform for growth together with our customers



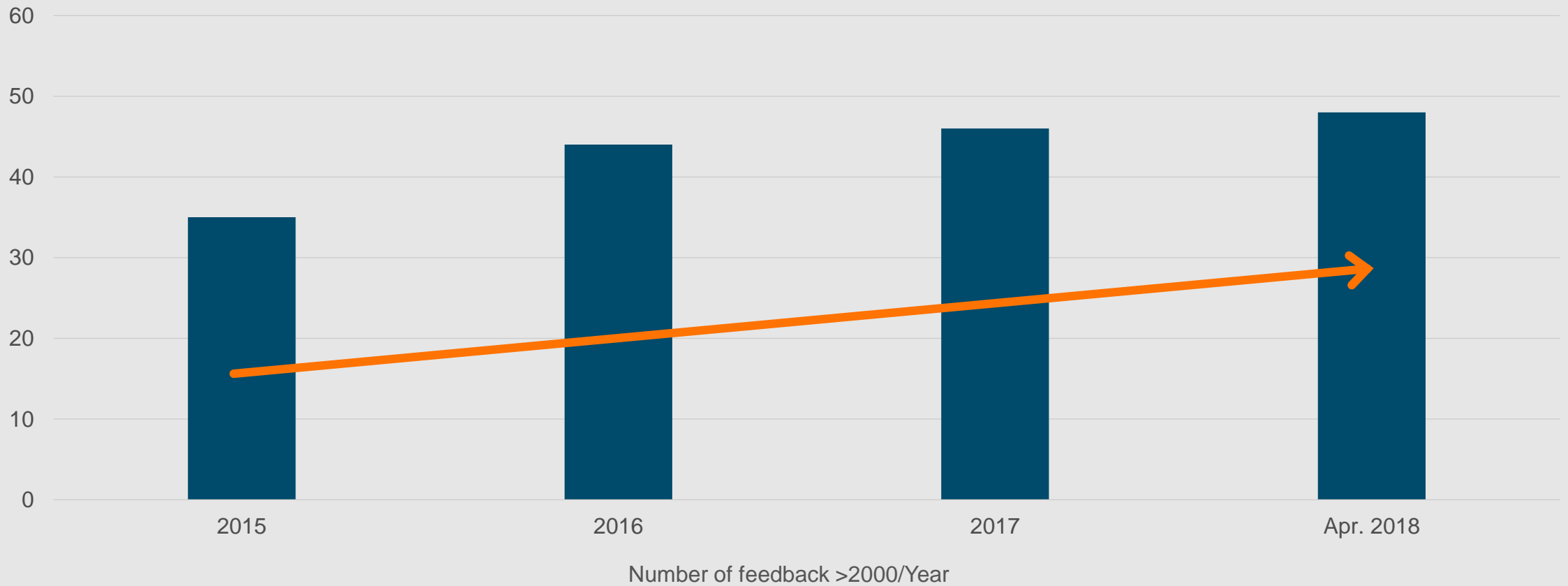
Installed base development supports our growth ambitions...



...as does the increasing number of installations under agreement



Customer satisfaction rates show steady improvement



Formula: $NPS = \% \text{ of Promoters} - \% \text{ of Detractors}$

We are continuously expanding our service portfolio to meet the needs of customers

UNDERWATER SERVICES

Underwater services minimise vessel downtime and off-hire by enabling work to be performed underwater during port calls instead of in dry dock.



LOCK-N-STITCH

Lock-N-Stitch is a sophisticated technology for metal stitching repair, thread repair, furnace brazing and fusion welding for marine and power applications.



Increasing energy efficiency with a smart energy storage solution

Challenge

- Reduce environmental emissions and modernise the vessel to make it more competitive.

Solution

- Battery solution with estimated reduction in emissions of 5.5 million kg CO₂, 30 tons of NO_x and 1,200 kg SO_x per year. In addition transformers, filters, switchboard, shore connection equipment, upgrades of existing components and commissioning.

Benefits

- Reduced energy consumption
- Lower operating costs
- Increased redundancy and responsiveness
- Improved environmental footprint

HYBRID SOLUTION
WITH BATTERIES



Systems like the one Wärtsilä has developed for us will be the standard on all our vessels in future, that's for sure.
Sveinung Økland, Operation Manager, North Sea Shipping AS.



Ensuring reliable operations of solar power plant

Challenge

- Optimised energy production of the PV plant in Burkina Faso consisting of solar plant which share control system with the thermal power plant. The thermal plant operates on 11 x Wärtsilä 32 engines.

Solution

- 7-year Asset Management Agreement for remote support by Wärtsilä Expertise Centres, to continuously monitor the plant parameters for optimised performance.

Benefits

- Efficient and stable power with unsurpassed performance
- Reduced fuel cost and environmental impact

HYBRID SOLUTION
WITH SOLAR POWER



This project represents
a breakthrough in the industry.

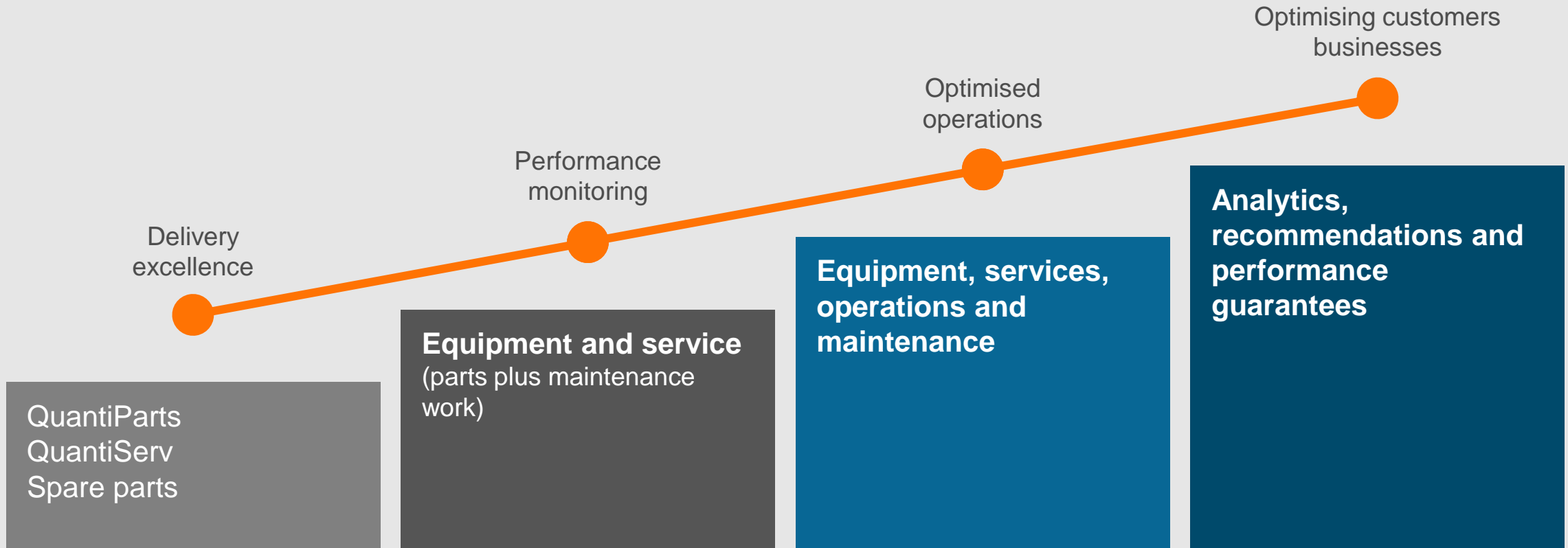
Christophe Fleurence, Africa Business Development
VP, EREN RE

Growing in smart solutions from our strong core business

Combining our core business with asset management, connectivity, and business model re-engineering creates a solid foundation for new customer lifecycle value propositions, revolutionising how this industry is operating.



From delivery excellence to optimising our customers' business



Our offering is based on meeting the needs of our customers according to their business objectives.

Situational awareness at your fingertips

Challenge

- Access to right real-time data for decision making and route optimisation.

Solution

- A mobile solution that utilises data collected from the vessel's bridge, automation systems, and onboard sensors integrated with third-party information like weather forecasts to help improve the safety and efficiency of operations

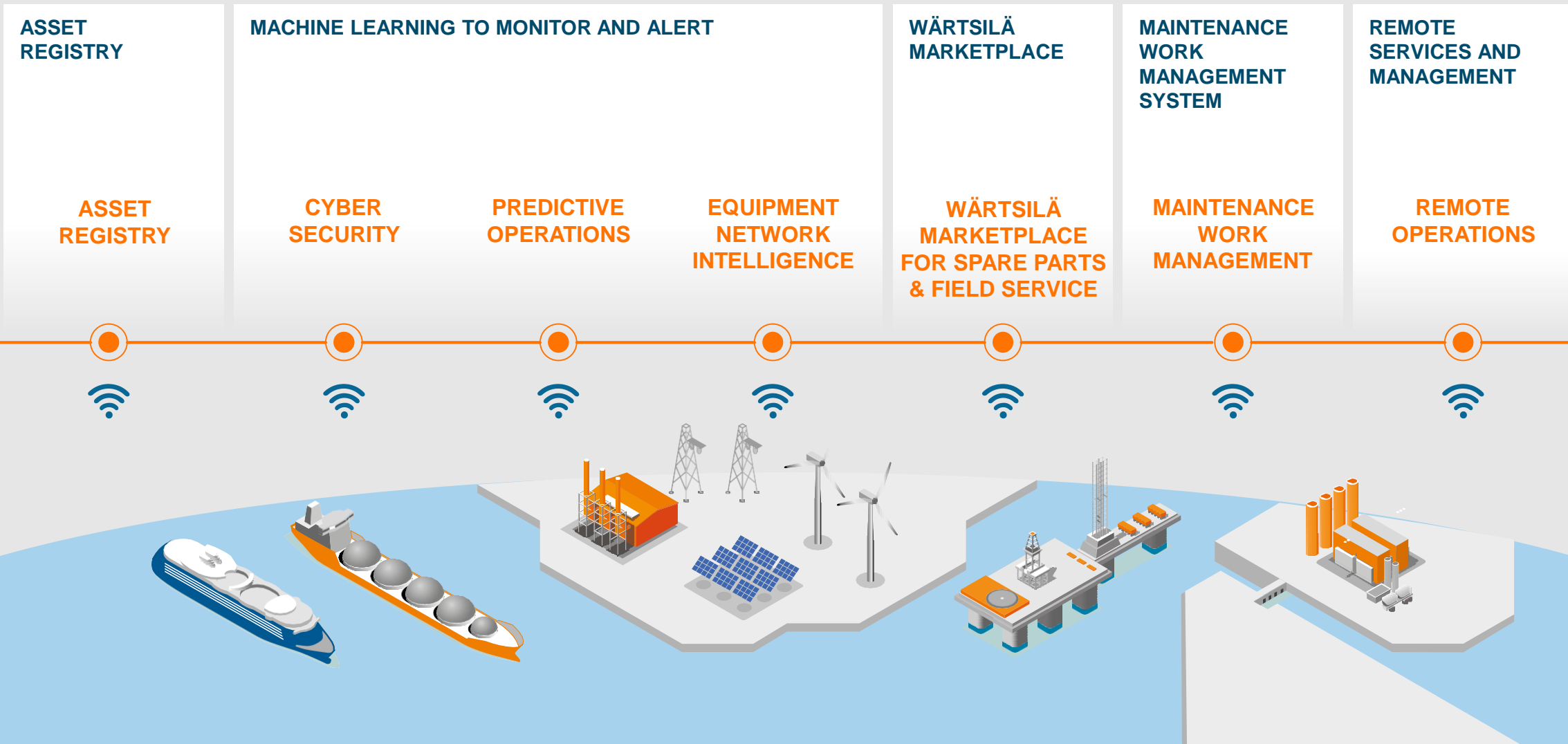
Benefit

- Insights how to achieve for example:
 - Increased safety and efficiency of operations
 - Optimal trim to save fuel
 - Exact RPMs needed to reach port just-in-time
 - Show how route performance compares to other vessels in the industry

MARKET SHAPING SOLUTIONS



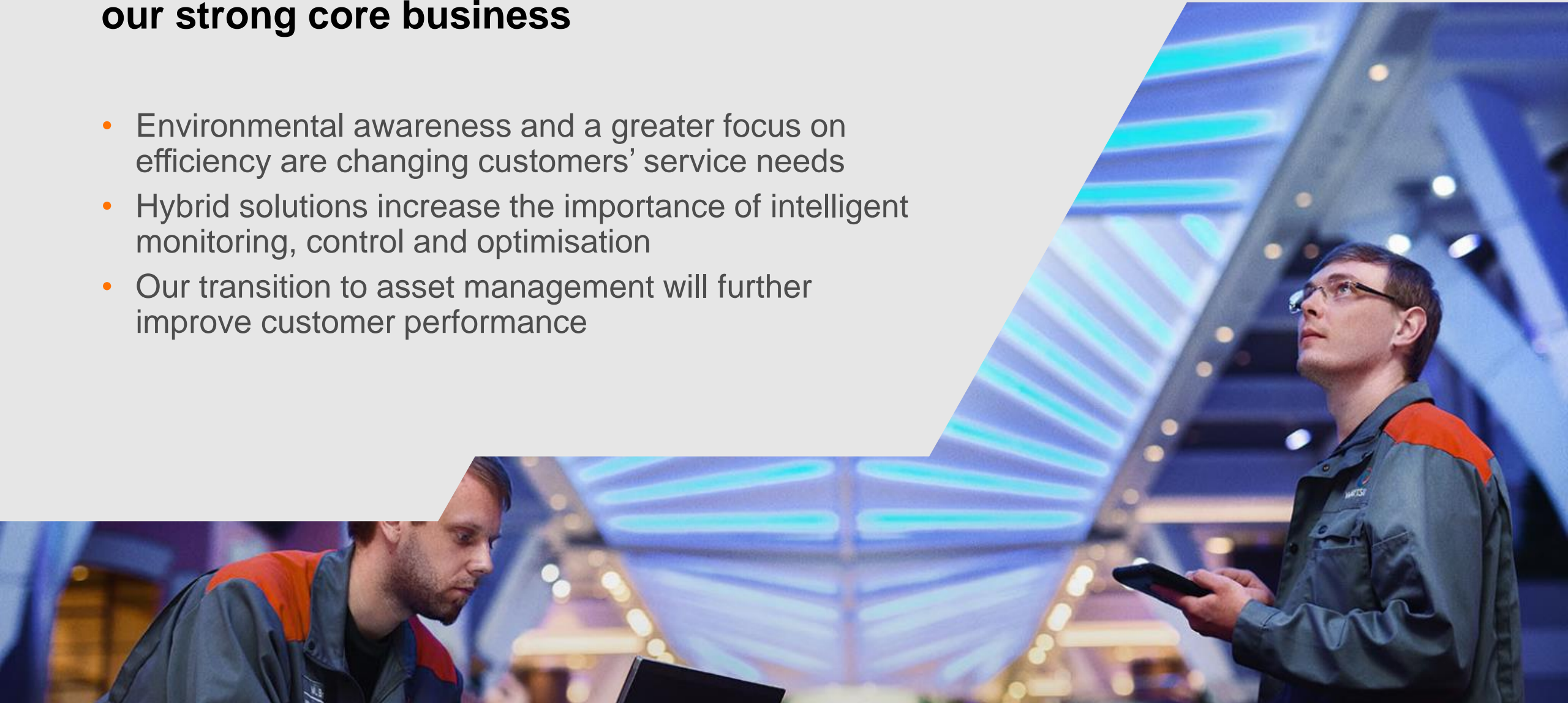
“ Eniram Mobile increases safety, emphasises efficiency and provides insights into compliance.



ASSET MANAGEMENT Managing equipment lifecycle in the most cost-effective manner

Growing in smart solutions from our strong core business

- Environmental awareness and a greater focus on efficiency are changing customers' service needs
- Hybrid solutions increase the importance of intelligent monitoring, control and optimisation
- Our transition to asset management will further improve customer performance



THANK YOU



WÄRTSILÄ

Capital Markets
Day 2018