

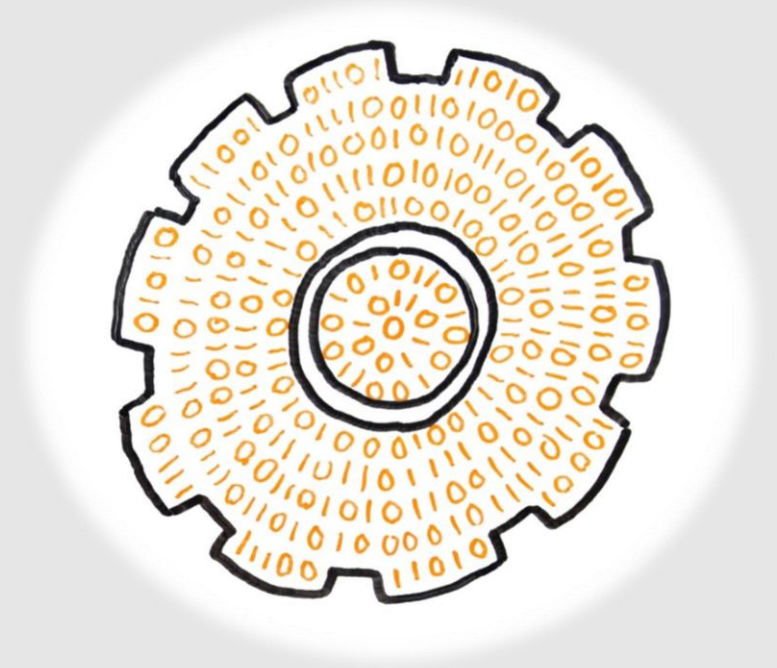
Athens digi shipping

Smart Strategies and Business Intelligence for Efficiency in Vessel Operations

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Agenda

1. Wärtsilä
2. Couple words about digitalisation
3. Yesterday – today – tomorrow -WoW
4. Together - Condition & Performance monitoring
5. Example of case from Efficiency



This is Wärtsilä

A global leader in advanced technologies and complete lifecycle solutions for the marine and energy markets



Our business areas



ENERGY SOLUTIONS



MARINE SOLUTIONS

SERVICES



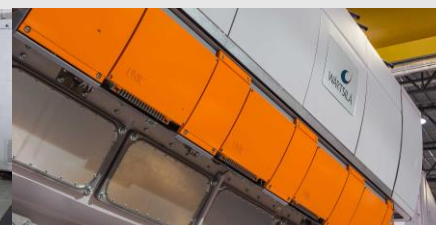
Product portofios



AUTOMATION



**BALLAST WATER
TREATMENT**



ENGINES & GENSETS



EXHAUST GAS CLEANING



LNG SOLUTIONS



INERT GAS



NAVIGATION



**OIL SEPARATION
SYSTEMS**



VOLTAGE SYSTEMS



PROPULSION & GB



PUMPS & VALVES



**SEALS, BEARINGS,
PROPELLER SHAFTS**



SHIP DESIGN



PROPELLERS



**WATER PURIFICATION
SYSTEMS**

What we bring to the market



EFFICIENCY



ENVIRONMENTAL SOLUTIONS



FUEL FLEXIBILITY



DIGITALISATION OF SERVICES IN THE MARINE, OIL AND GAS AND ENERGY SECTORS

WÄRTSILÄ SERVICES

Technology

Digitalisation is enabled by technological developments, but its significance is in the opportunities **enabled by these technologies**, not the technology as such.

New business models

Digitalisation is changing how companies **create value for their customers**. It also can bring new horizontal value add when different industries cross or more comprehensive **value-chains** are created.

User experience

User experience is central, as user expectations keep growing. This will lead to a demand for seamless and effortless solutions, with a **focus on usability, human-machine interactions, and visualisations**.

Human behaviour

Ultimately, digitalisation is about change in human behaviour. **It's a cultural change** that's having a positive effect on our lives on many levels, from our daily interactions with each other to where and how human beings can add unique value.

Yesterday – today – tomorrow

- Operational documents at CD
- First condition monitoring solution for engines
 - Human: are these spy tools?
- Bundle of solutions for different disciplines
- Data & analysis availability anytime anywhere
 - Human: Expectations of digital era
- Ecosystem thinking
- Remote operations & autonomous vessels
 - Human: Digitalisation natural part of living

Early 2000

Easy access

2010's

Reactive

2020 →

Directive

Wärtsilä Genius services

We help your
business top-
line growth

Productivity

Rethinking services

Predictability

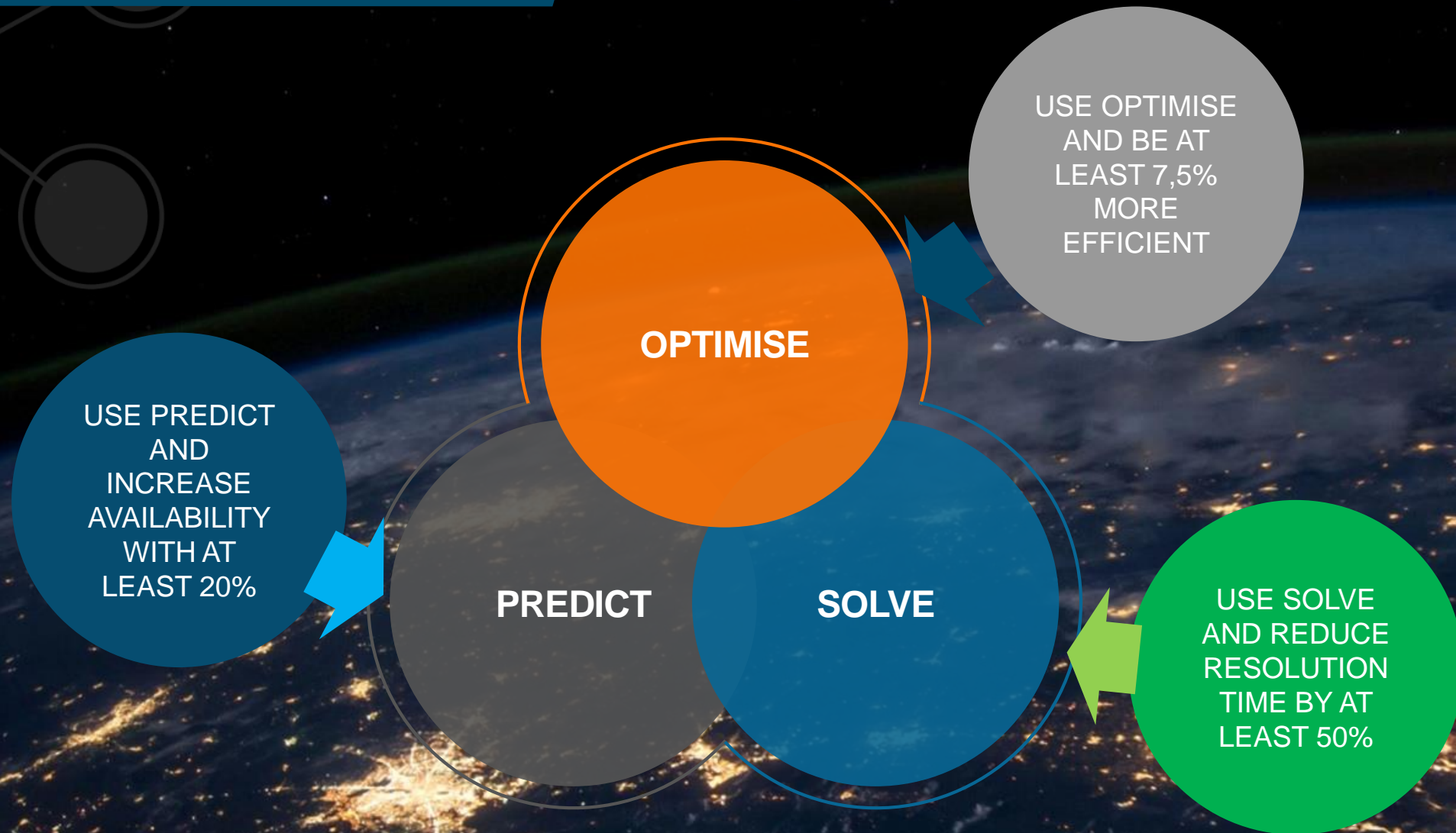
Availability

Safety

Efficiency

Value creation is a partnership in which digital technology and analytical skills of experts are combined to achieve a common goal.

Transparency



The services, impact on operations?

CBM - for Main
engines reliability

Hull fouling study -
for efficiency

Virtual service
engineer - for urgent
need

Cargo pumps
operation time – for
operations eff.

Fleet comparison for
– better operations

How does these
impact on operations
– strategy, BI ?

2005 Eniram founded as a spin-off from Finnish cruise building industry

2013 First Pilot LNG installation in the Greek market



2015 Growing on the success in Greece, open up markets in Japan and Middle East



2017 → Eniram and Wärtsilä to improve and innovate on the tanker and LNG offerings



2011 First Pilot tanker installation in the Greek market



2014 Speed and Engine optimization for LNG increases savings from 2% to 5%

2016: 31 Tanker installations & 21 LNG installations for Greek owners in 4 years



FUEL SAVINGS

- Changing crew behavior and optimizing speed, engine and trim performance



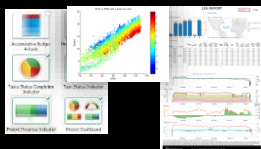
DATA & VISIBILITY

- Automatic high frequency data collection
- Real-time access to data for day-to-day onshore operations and monitoring



INSIGHT

- Vessel & Hull performance trending and actions
- Cargo Management Improvements



BENEFITS

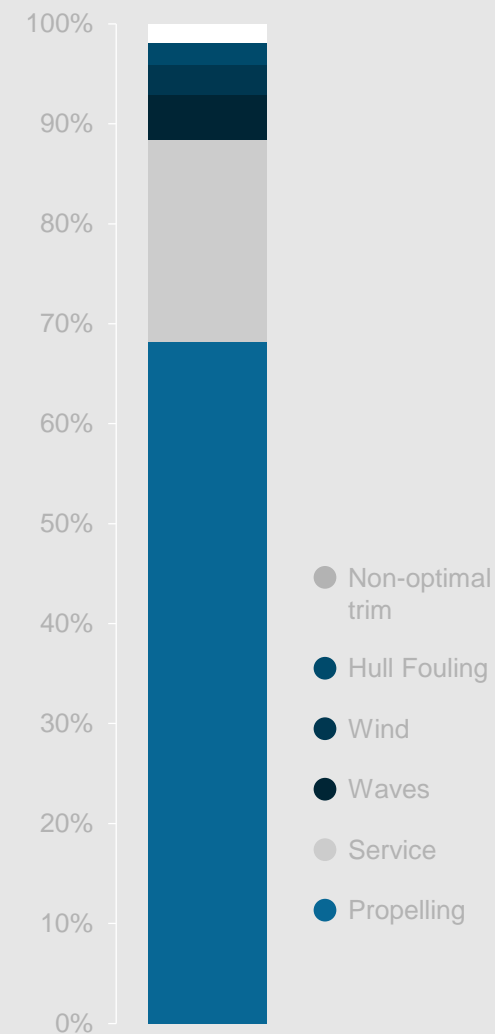
\$\$\$ savings through

- Trim 1-2%
- Speed 2%
- Engine 2-3%

- Tactical and operational improvements
- Commitment to improve performance and development of best practices

- Planning and predicting based on long-term fleet performance
- Increasing the value of the assets (fleet and cargo)
- Continuous search for new areas of improvement and aligning operations with business needs

AREAS OF FUEL USAGE



Join us on the digital journey!

- Wärtsilä's ambition is to **expand our thinking** to entire ecosystems around our industry. We aim to help the entire industry to succeed through digital.
- Digitalisation creates **new opportunities for growth**. It is changing how to create value and enabling new business models.
- Digitalisation brings opportunities for the **whole value chain** from single equipment, essential systems and third party equipment to entire vessels or plants.
- We take a **complete lifecycle perspective** for the marine, oil and gas and energy industries.
- Wärtsilä has an ambition to **co-create digital solutions** together with you and work towards a comprehensive digitalised approach to optimising operations and enabling growth



WÄRTSILÄ