Applications Mature Like Fish, Data Matures Like Wine

- **Agentic AI conference 2026**

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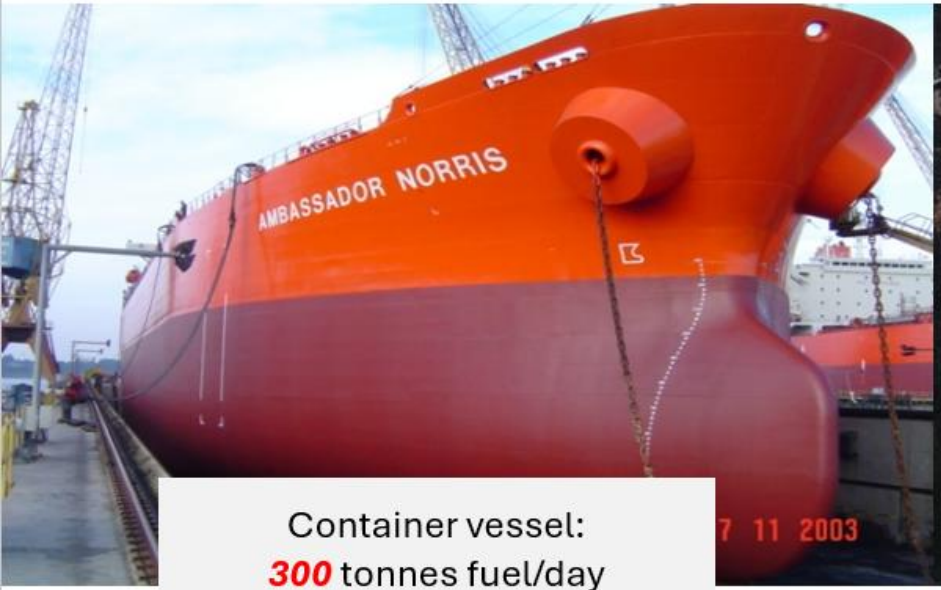
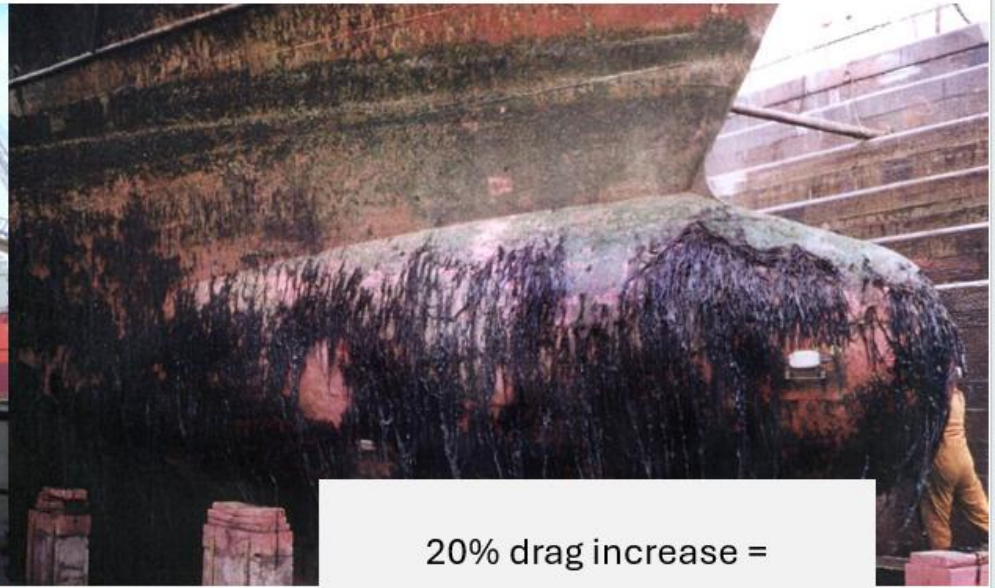
The challenge

- How does a traditional manufacturing organization take steps towards becoming a more data driven organization?

The key problem of our marine customers





Container vessel:
300 tonnes fuel/day

Monthly fuel spend:
~3.6 Million USD

20% drag increase =

10.8M USD increase per year
+ 20% more CO_2 exhaust

Public

Why do some vessels perform better than others?

Vessel factors

Speed, Activity, Trading route, Hullform, Duration of stationary period, Fouling control coating selection, Etc.

Seasonal availability of planktonic, bacterial, algae and animal fouling organisms

Biological factors

Sea surface temperature, Salinity, Nutrient availability, Dissolved Oxygen content, Etc.

Environmental factors

Can we use data science to predict this fouling risk?

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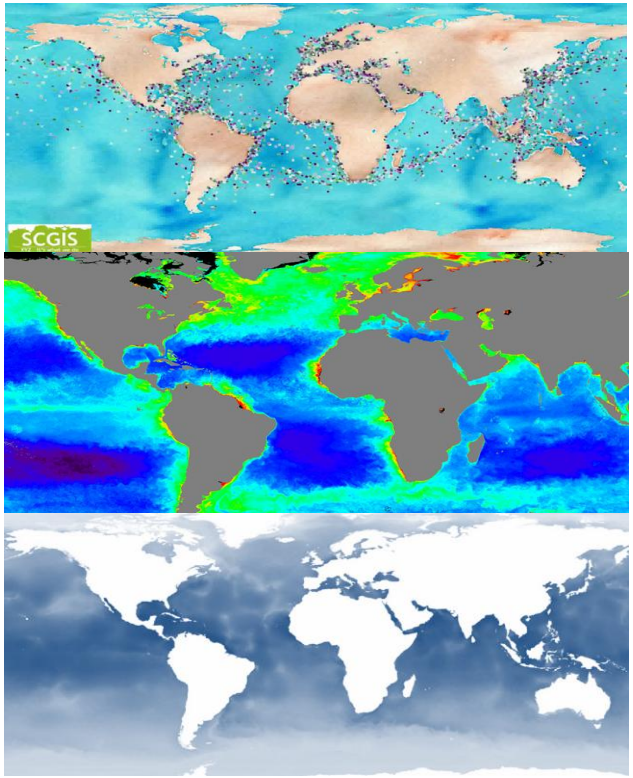
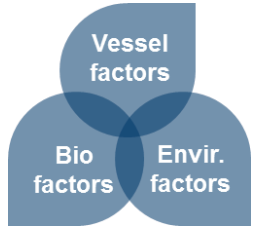
Data collection and modelling



Global Environmental Data



Vessel position (AIS)

Vessel attributes

Fouling occurrences

24,500 vessels	*2009-2020 (11 years)*	*Every 15 minutes*	*8 Environmental parameters*
6+ Billion data records	*~ 4 TB*	*1,200 variables analysed for impact on biofouling prediction*	
Computational fluid dynamics based on the shape of the hull		*Ensemble of 9 Neural Networks released on data to build predictive models*	

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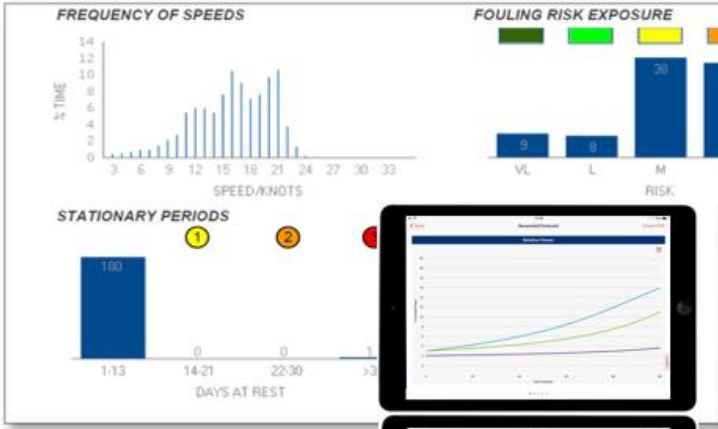
Continuous development (2009 – 2020)

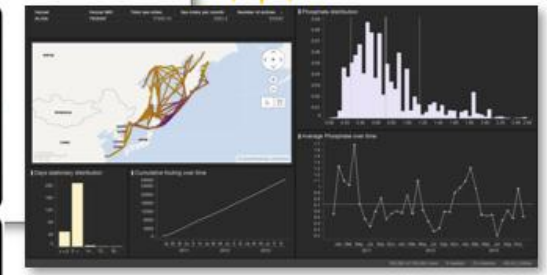
2015
1st Marine Fuel Prediction Tool!

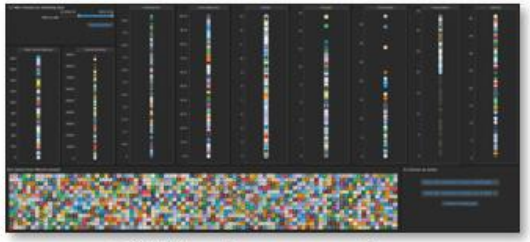
Visualize routing and stats



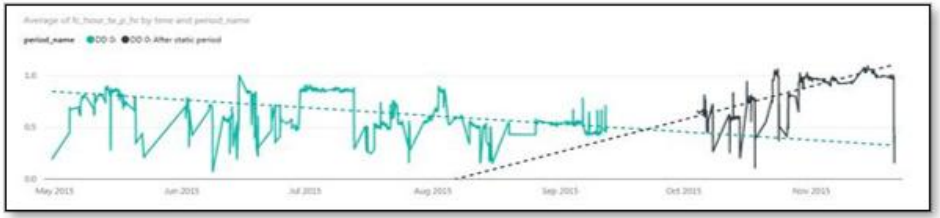
Fouling prediction

Break-even analysis on fuel consumption





DNA of a vessel



Vessel operations

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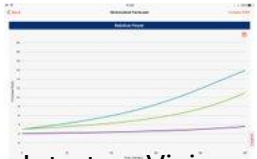
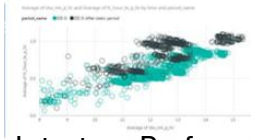
Journey (2009 – 2020)

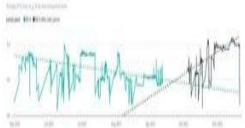
Intertrac



Intertrac Vision



Intertrac Perform



Intertrac Challenge

Objective	Capability	Data
Where has the vessel been and what is the operational profile	Uses categorical data assessment (VL to VH) and Large Marine Ecoregions (LME) to define fouling risk	70k unique vessels Lat/Long every 15 minutes
Generates predicted fuel oil consumption profile based on data inputted by customer/sales rep.	Power roughness curves derived from Computational Fluid Dynamics (CFD) of certain hull forms	Coatings roughness data, Coatings performance data,
Tells you how well a vessel has performed (fuel efficacy) pre- and post- dry dock	Vessel performance analysis tool	Uses Vessel operator data record on-board, Filters and models for weather
Provides Challenge maps for predicting (and back-calculating) Fouling Risk	Environmental data and Fouling Challenge delivered for each point	Sea Surface Temperature, pH, salinity, nutrients etc.

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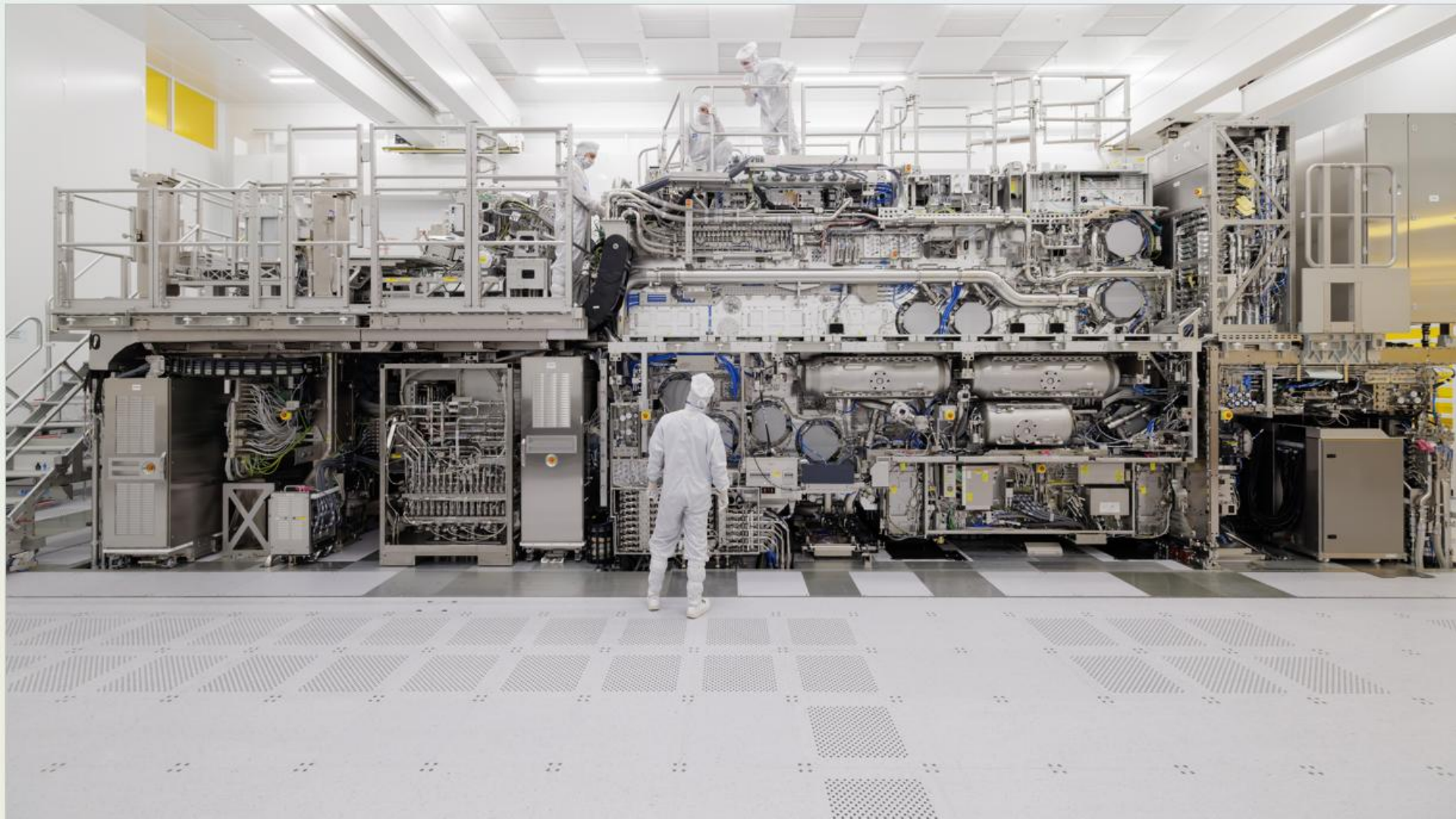
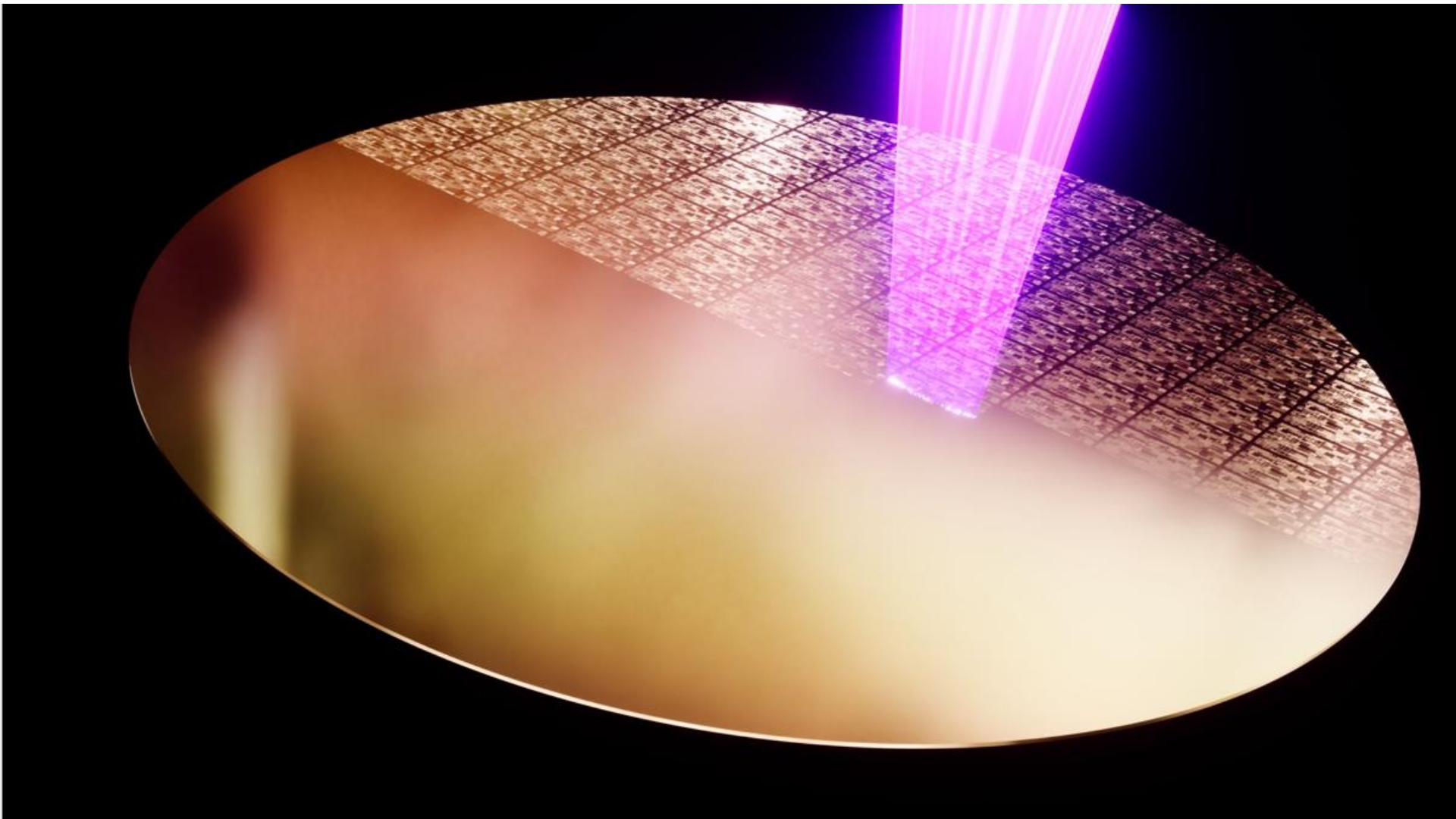
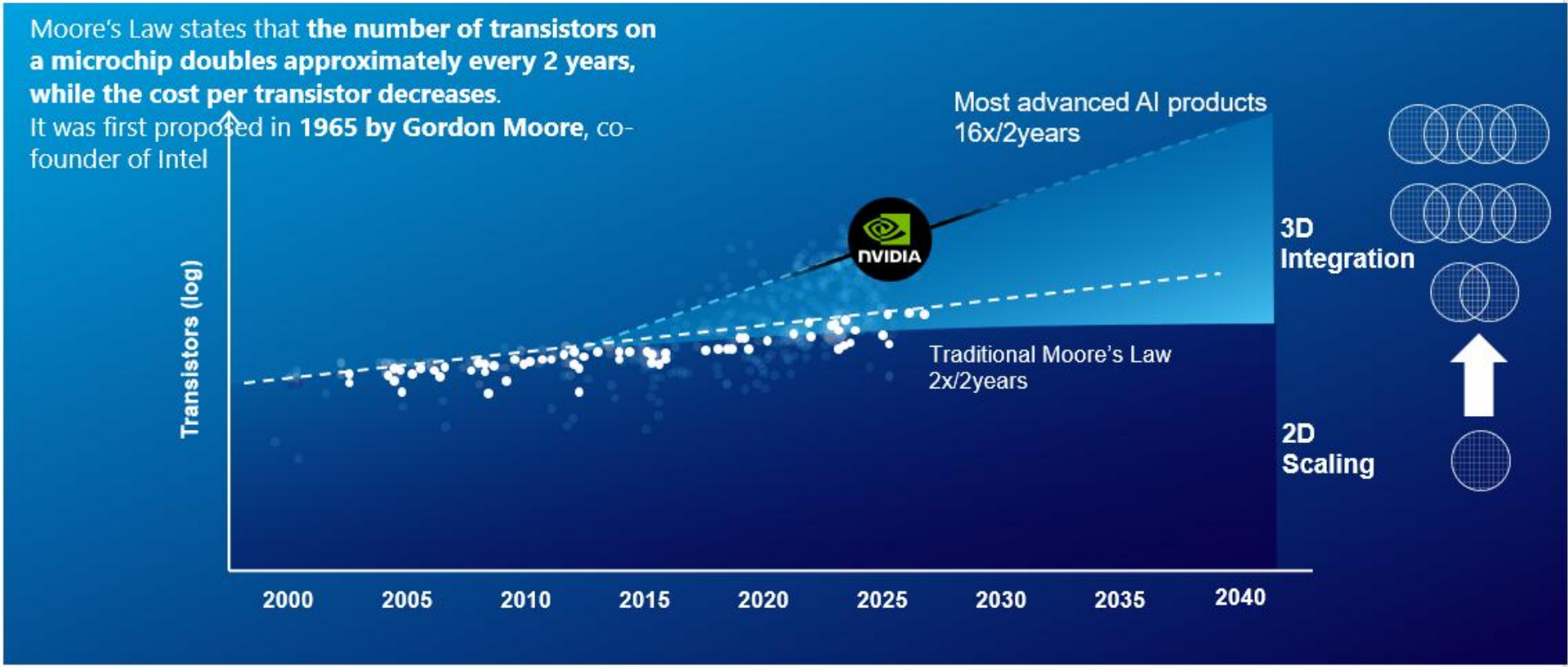
Result: New data driven business proposition





Compute demand from AI accelerated since 2010, outpacing Moore's law

- Moore's law alone is not sufficient to meet future training computing power requirements



Sources: H.S.P Wong et.al. Stanford Technology Integration Trend, accessed 2,2, '25, Epoch AI "Data on Notable AI Models" & "Data on Machine Learning Hardware"

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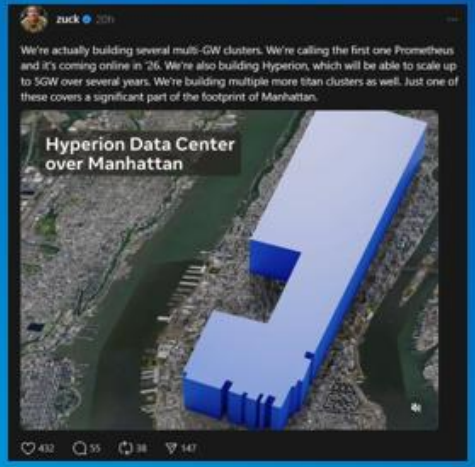
On top of addressing volume, energy consumption must be reduced

- Meta's new 5 GW Manhattan-size data center consumes the energy of 5 nuclear power plants

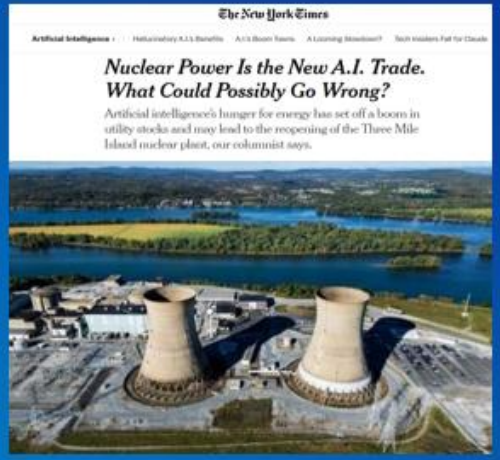
Meta announces 5 GW datacenter



And some more…:

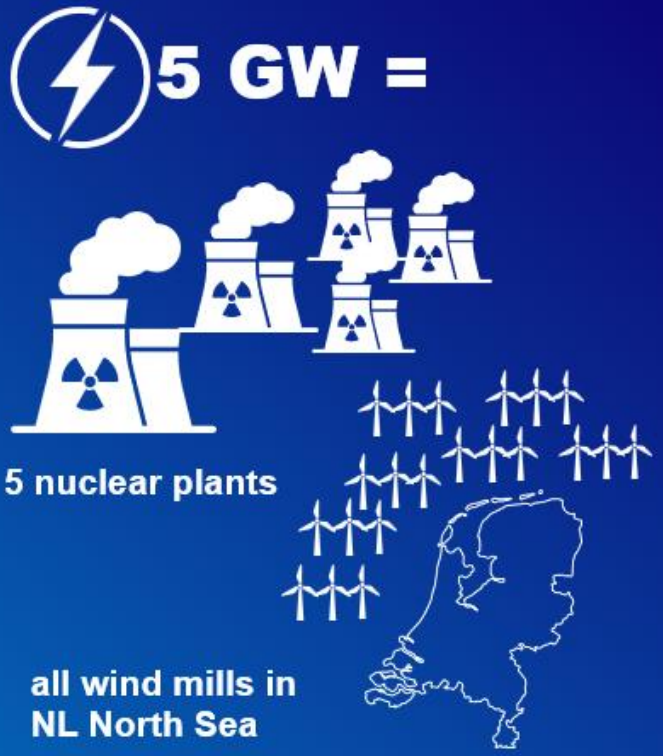
- Open AI / Oracle Stargate: 4.5 GW
- Google: 3GW Data Center
- Amazon : >2GW Data Center

AI energy use requires new gas-fired & nuclear power plants



2024: ~120 GW total capacity

2030: >220 GW total capacity expected



Source: Bloomberg, The New York Times

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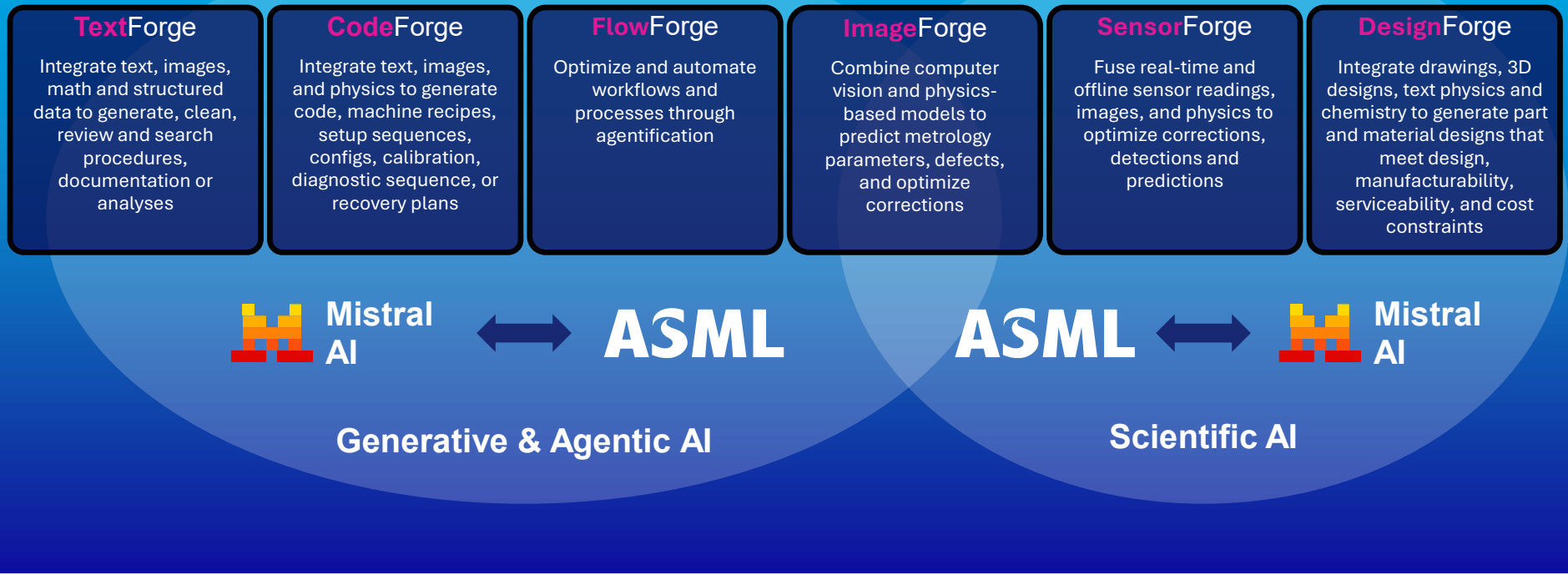
Mistral is co-developing Forges to make AI accessible to all

- Employees gain access to tooling, training, and community to accelerate their projects



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AI to support product classification for export control and customs

- Reduce processing time and increase classification quality > increase compliance

Manual Product Classification → **AI-based Product Classification**

The foundation for Trade Compliance = Product classification

Harmonized System (HS) codes focus on what the product is
Export Control Classification Number (ECCN) focus on what the product can do

Technical delivery within one calendar year

1. **Semantic Text Parsing & Regulatory Cross-Referencing**
2. **Parameter-Driven Decision Trees**
3. **Real-Time Web Search Integration**

Mistral AI

It all starts with high quality data

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Applications Mature Like Fish, Data Matures Like Wine

- Observations

- Delivery speed has surged; development that once took years now takes months.
- The software landscape has evolved; legacy local installations are replaced by cloud-native, on-demand web applications
- Scalable economics: Exponential compute and storage capacity at lower costs.
- High-quality data has become a critical prerequisite, driving the success of all modern technical initiatives.
- Historical data has re-emerged as a strategic asset, providing the baseline context necessary for predictive accuracy.

AI failures are rarely just “model problems” — they are data problems first.

Well-designed AI with bad data still fails.

Average AI with high-quality data can perform very well

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