

Ocean Data as a Business: Wholesale Dreams & Bespoke Reality

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April 2026

Disclaimer

- There are lots of details underlying the broad brush strokes here. Many colleagues have contributed directly or indirectly (thanks for borrowed images)
- Mistakes are my fault and I apologize in advance for any errors
- Inclusion of any content/tech is informative not an endorsement

The part of threes . . .

- Who buys ocean data and why
 - Not just oceanography
- How have private companies engaged the market
 - Commercial and Defense
- What about scalability
 - How might we consider quantity vs. quality

The part of threes . . .

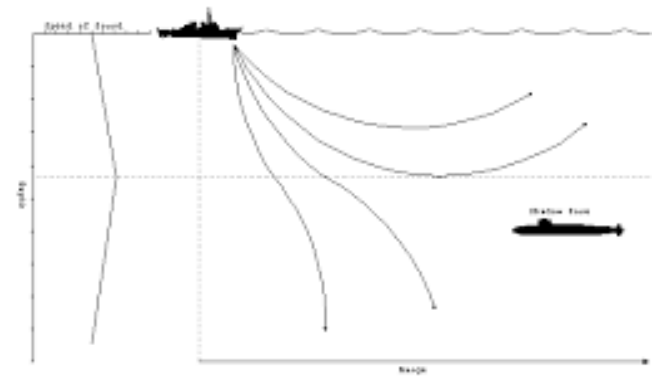
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Ocean Data

- Meteorology and Oceanography
 - Mostly public sector
- Hydrography
 - Public and private
- Geophysics
 - High \$ private
- Biology/Chemistry
 - Public and limited

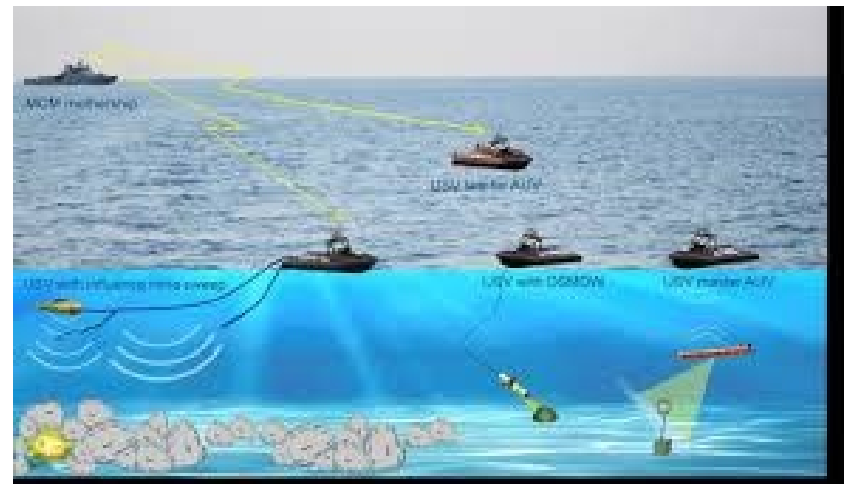
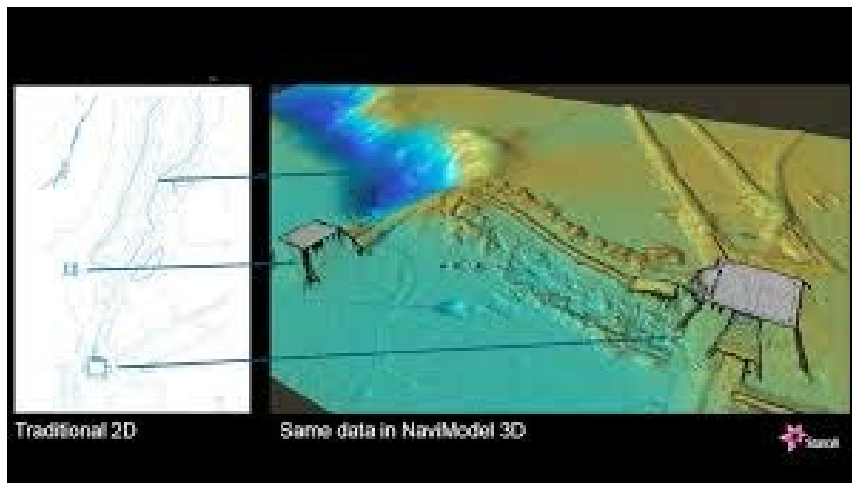
METOC

- Meteorology and Oceanography
 - NOAA etc. = weather, models, research
 - Energy = operations and planning
 - Defense = models and planning



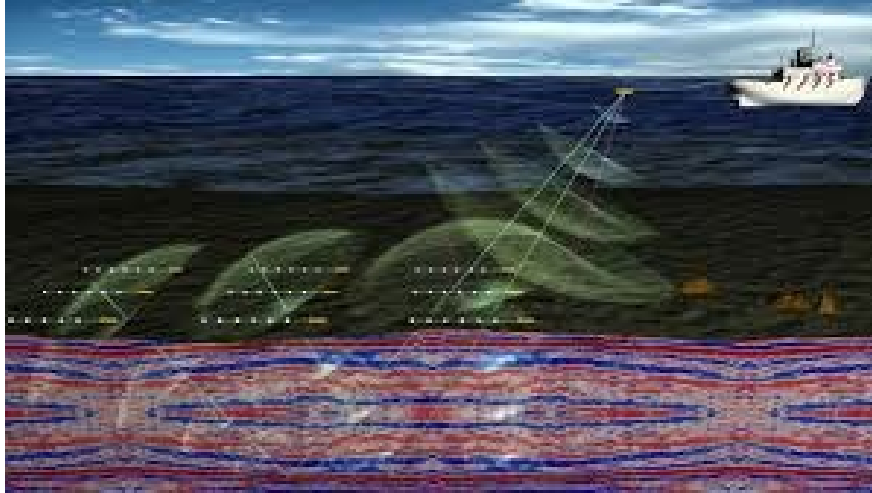
Hydrography

- Hydrography
 - Ports (public)
 - Energy (private)
 - Defense (MCM)



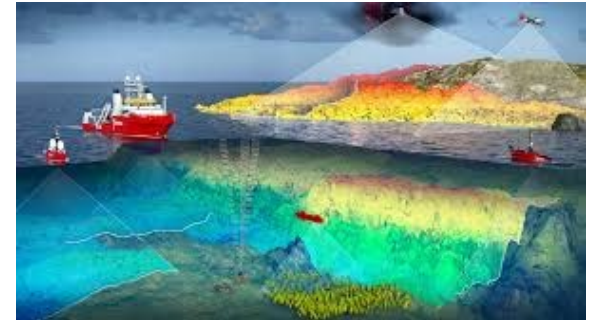
Geophysics

- Geophysics
 - Important for energy (O&G and renewable)
 - VERY expensive
 - Used to be a speculative market, no longer



Biology/Chemistry

- Biology/Chemistry
 - Almost zero market demand
 - Many research questions
 - Much innovation potential



Pause

- What do all those users have in common?
 - Specific and distinctive data needs
 - Zero wholesale demand (i.e. not collect once sell more than once)
 - Limited overlap in sensor/data details

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Xocean vs. Saildrone

\$175M since 2019 - \$350M since 2015

Focused on survey - Aimed for wholesale METOC

Raised \$ on revenue - Raised \$ on vision

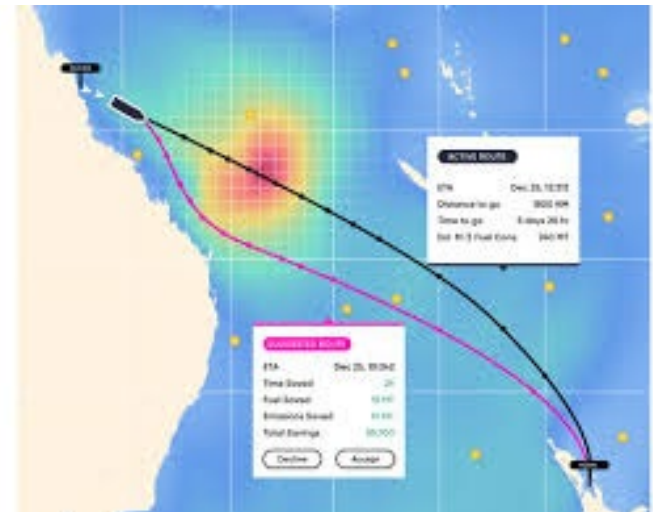
Capital efficient - capital hungry

Still in core market - chasing new markets



Sofar Ocean

- Affordable and proprietary data
- Enables diverse end users (side interest)
- Public provided data
- Subscription (bespoke) information service



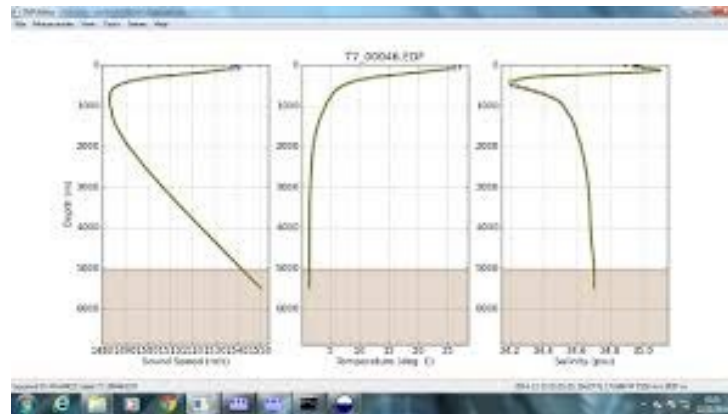
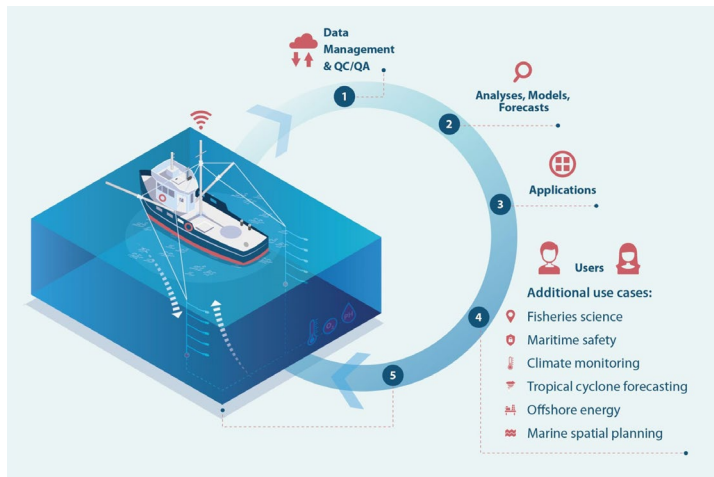
Ocean Data Network

Affordable Sensor (quantity vs quality)

Easy to deploy

In regions of interest

Delivering to unique end users



Salient Predictions

Truly engaging AI

Targeting specific outcome with big \$ value

Fine tuned to end user needs (temporal/spatial)
not research needs

Making \$!!!

2X

Accuracy improvement
over competitive forecasts

4 billion

Machine learning predictors

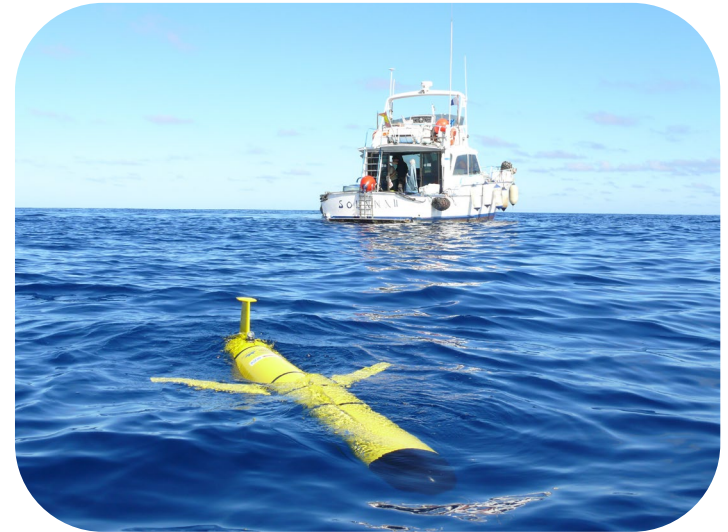
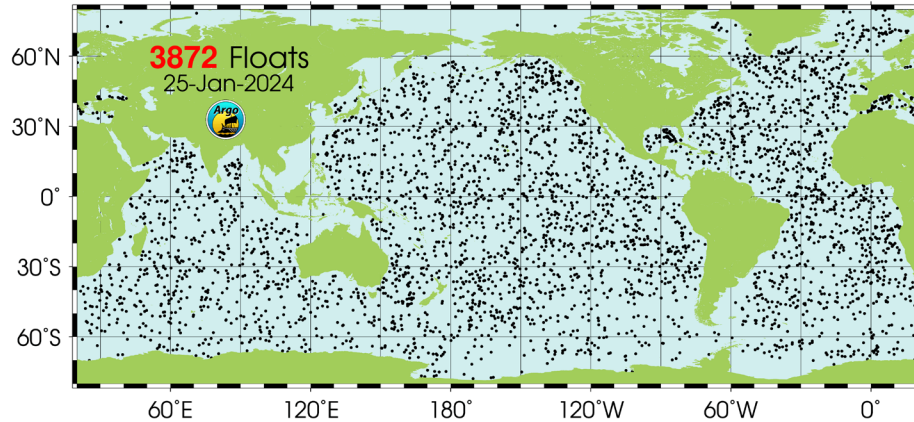
5 million

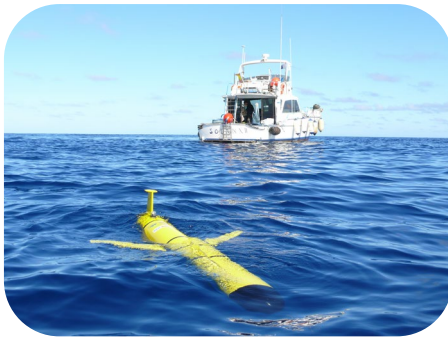
API data points generated weekly

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(context of mCDR MRV)

Ocean Observing Platforms

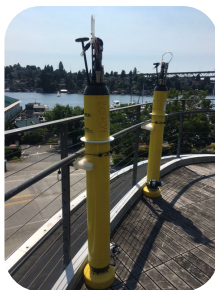




~ 1000



~ 1000



~ 4000



Scaling Platforms

OCEAN ~ 1/60,000 km²

CA ~ 424 km²

CA = 7 *in situ* points



Ocean Observing Sensors

pH

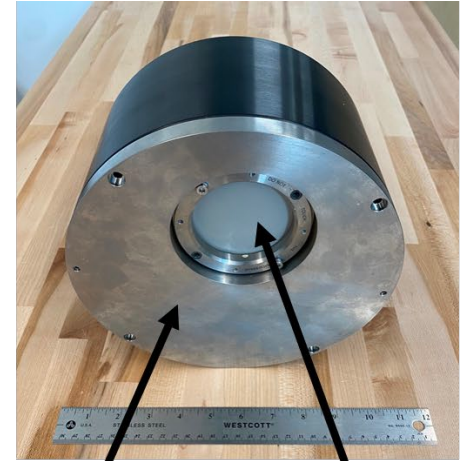


Total Alkalinity



Vacuum Port

Power and Communication

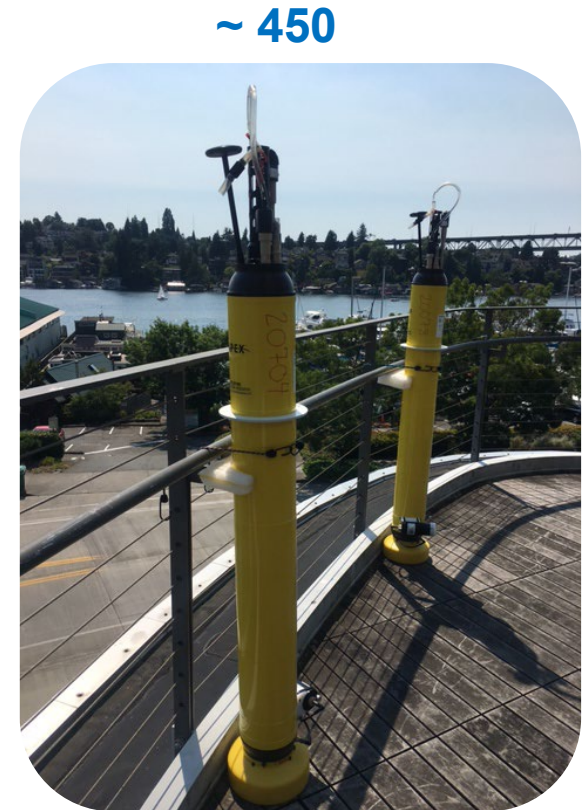
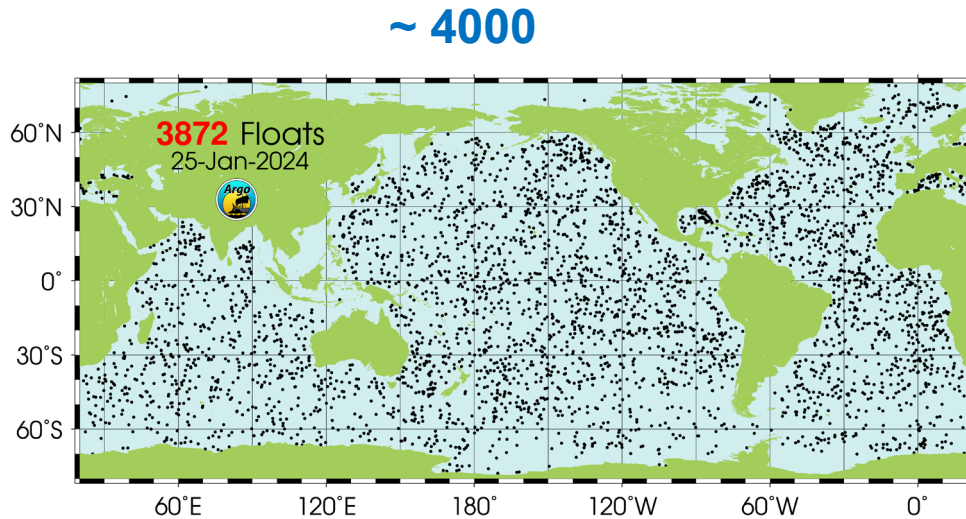


Pressure Housing

Gas Separation Membrane

Methane ($\Rightarrow$ pCO₂)

Scaling Sensors



Current BGC sensors => 10x METOC

Conclusions (mCDR MRV)

- **Best models will require *in situ* data**
- **Today's tech covers too little area/volume**
- **Platform performance (\$/time/area) 1-2 orders of magnitude improvement**
- **Sensor costs 3-4 orders of magnitude improvement**
- **Global MRV is feasible . . . Is the tech?**

Dropping Prices for Performance



Viable UUV/AUV @ \$75k



Robust ROV @ \$10k

Persistent USV @ \$100k

**Cost of platform finally lower
than cost of payloads**

Approaching free . . .



What is it about the Robots?



“The world’s most valuable resource is no longer oil, but data”

The
Economist

They drive the data future
for our ocean planet

But who pays, and why?



A full-page background image of a beach at sunset. The sky is filled with vibrant orange, red, and pink clouds. Two palm trees stand on the right side of the frame. In the distance, a long pier extends into the ocean. The foreground is a sandy beach with some footprints.

Thank You

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