



THE COVEPAK

American Maritime Production Power Returns

COLLAPSE OF US MARITIME: THEN VS NOW

Then



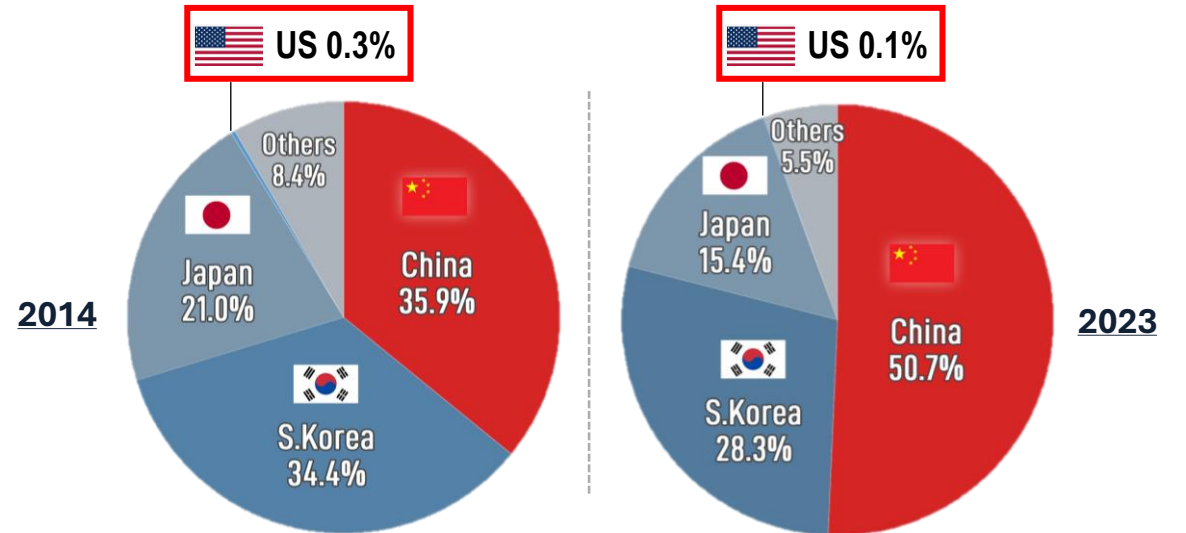
Photo: Higgins Industries in New Orleans in 1943;

They built a boat **every 45 minutes, 24/7** for three years

By 1943, American shipyards built 3 ships a day

Now

US Holds Less Than 0.1% of the Global Market



China is Outbuilding the US by 232 Times

China builds ~1,700 commercial ships annually. U.S. - less than 5



US Operated 130,000 Boats in WWII for Indo-Pacific. Now it's 70.



Actions Needed to Optimize Small but Critical Fleet

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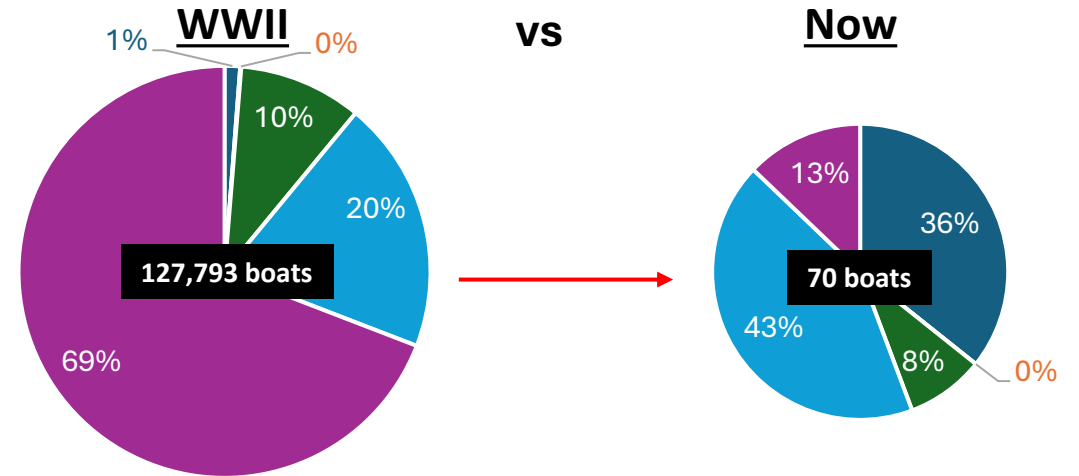
- The Army's watercraft fleet has been drastically downsized

- 127,793 (WWII) → 134 (2018) → 70 (2024)

- Most of them are NOT mission-capable

- Fully mission capable rate: 75% (2020) → under 40% (2024)

US Army Ships & Watercraft for Indo-Pacific



	WWII	→	2024
1000t+ Troop and Cargo Ships	1,557		25
1000t+ other specialized ships (cable, port repair, hospital, etc.)	108		0
Under 1000t Vessels (freight & supply, minecrafts, tugs, etc.)	12,379		6
Barges and non-propelled watercrafts	25,383		30
Amphibious assault crafts (Shore landing crafts - no ports)	88,366		9
Total	127,793	→	70

WHY NOW?

Navy's \$66B Shipbuilding Surge Fuels Physical AI and Automated Manufacturing

\$66B

FY2027 naval
shipbuilding request

34

vessels funded
(2× FY26 rate)

500K

shipyard worker
shortfall

01

Budget surge doubles naval procuremen [1–4]

The White House FY2027 request proposes ~\$66B for naval shipbuilding, doubling FY26 enacted levels, to fund 34 vessels as part of a \$1.5T defense proposal giving the Navy its largest-ever share at \$150B.

02

Physical AI bridges the workforce gap [5–7]

The industrial base faces a half-million-worker shortfall. HII is deploying AI-driven welding and inspection with double-digit throughput gains; Red Cat's Blue Ops unit uses AI-powered 3D printing to double USV production capacity.

03

Autonomous manufacturing becomes the critical path

As shipbuilding budgets scale while workforce and capacity constraints persist, demand will intensify for autonomous manufacturing systems — a significant growth vector for dual-use startups that bridge the production gap.

Forward-Deployed, Advanced Additive Manufacturing



In-Facility Unit

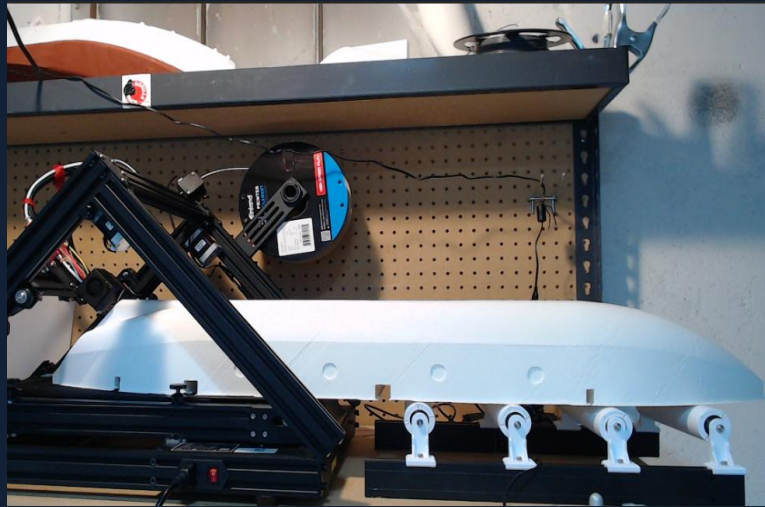
- 24/7, Lights-out Maritime Manufacturing
- Automated Building & Testing



Expeditionary Unit

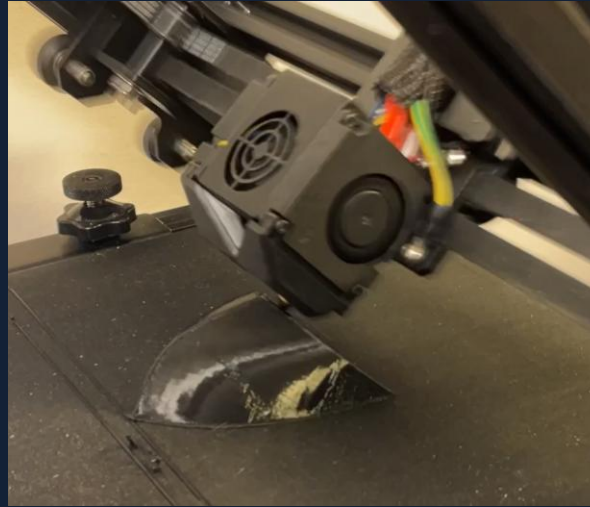
- Forward-deployed, Distributed Microfactory
- On-Demand Production

New Standard for Boatbuilding



Belt-based Printer

- Infinite Length (z-axis)
- Continuous, Hands-off Manufacturing



Rapid Printing

- CoreXY Gantry System
- 45-degree Slanted Printing



Maritime Applications

- Next-Gen Hull Material (HDPE)
- Design-Agnostic Manufacturing
- Boatbuilding in Days, Not Weeks

Market Wave Already in Motion



NSWC Solicitation

Naval Surface Warfare Center

- NSW is actively seeking 3D-printed, expendable 15–30 ft USV hulls for rapid deployment in CENTCOM, to be outfitted with autonomy and mission payloads to counter emerging surface and airborne threats. (Apr, '26)



Redcat X Haddy (CEAD)

- Red Cat's Blue Ops unit using 3D printing to double USV production capacity (Apr, '26)



HavocAI X Haddy

- Havoc Harbinger, a 40-ft semi-submersible autonomous logistics vessel, was designed, 3D-printed, and operational in under 30 days, demonstrating rapid production and deployment (Mar, '26)

3D Printed Boats Pros & Cons

Pros

Cons



Rapid Prototyping & Design Iteration



Less Construction Cost



No Skilled-labor Required



In-house, 24/7 Production



Lightweight Structure & Limited Durability



Limited Size



Limited Throughput

Small & Unmanned

and Why it's Actually Better

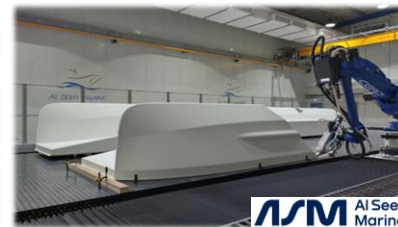
• Navy wants USVs to be attritable

• Small boats and most USVs are less than 60ft

• It's actually **FASTER**
• Boats are mostly customized

Regular 20ft Vessel

Weight: 1,500-3,000 lbs
Build Time: **1-4 wks**
Material: Fiberglass, wood, aluminum, etc.



Location

Maine, USA

Indiana, USA

Abu Dhabi, UAE

Delft, Netherlands

Koufurderrige, Netherlands

Vessel Size/Weight

25ft/5,000lbs

51ft/4,012lbs

40ft/-lbs (Twin hull)

20ft/1,100lbs

20ft/1,100lbs

Printing Time

72h (3 days)

65.5h (2.7 days)

132h (5.5 days) for each hull

55h (2.3 days)

65h (2.7 days)

Material


Polymer-based fiber-reinforced composites

Techmer PM carbon fiber-reinforced ABS

CEAD HDPE (High-Density Polyethylene)

CEAD HDPE (High-Density Polyethylene)

Recycled Plastic Materials

	Aluminum	Fiberglass	HDPE High-Density Polyethylene
Manufacturability	<ul style="list-style-type: none"> • Skill level: High • Traditional Welding 	<ul style="list-style-type: none"> • Skill level: Very High • Lay up/Infusion in molds • Highly manual with low flexibility 	<ul style="list-style-type: none"> • Skill level: Very Low • Heat Welding • 3D Printable
Radar Detectability	<ul style="list-style-type: none"> • Highly Reflective (RRI* = 0 dB) <small>*RRI: Radar Reflective Index compared to Aluminum</small>	<ul style="list-style-type: none"> • Low (RRI = -25 dB) 	<ul style="list-style-type: none"> • Very Low, Transparent (RRI = -40 dB)
Hull-to-water Noise	<ul style="list-style-type: none"> • Low Damping; Very Loud Hull 	<ul style="list-style-type: none"> • Moderate Damping 	<ul style="list-style-type: none"> • High Damping; Quieter Hull
Weight (Density)	<ul style="list-style-type: none"> • Heavy (~2.65 g/cm³) 	<ul style="list-style-type: none"> • Moderate (~1.8 to ~2.5 g/cm³) 	<ul style="list-style-type: none"> • Low (~0.94 – 0.97 g/cm³)
Durability	<ul style="list-style-type: none"> • Moderate-Poor • 5-15 kJ/m² impact before failure • Cracks after 12-20% elongation 	<ul style="list-style-type: none"> • Fair-Poor • 10-30 kJ/m² impact before failure • Cracks after 1-5% elongation 	<ul style="list-style-type: none"> • Good-Excellent • 80-200 kJ/m² impact before failure • Cracks after 500-800% elongation
Maintenance	<ul style="list-style-type: none"> • High • Needs constant maintenance due to seawater corrosion and biofouling 	<ul style="list-style-type: none"> • Moderate • No electrochemical corrosion but osmosis over long exposure; Still bio-fouls 	<ul style="list-style-type: none"> • Extremely Low • Total corrosion & fouling proof • Recyclable
Repairability in the Field	<ul style="list-style-type: none"> • Normal ubiquitous welding & patching 	<ul style="list-style-type: none"> • Slow patch lay-ups 	<ul style="list-style-type: none"> • Quick repair with portable extrusion welder
Raw Material Price (as of Oct '25)	<ul style="list-style-type: none"> • \$1.04–\$1.18 per lb 	<ul style="list-style-type: none"> • \$1.00–\$2.00 per lb 	<ul style="list-style-type: none"> • \$0.50–\$1.02 per lb
Supply Chain Resilience	<ul style="list-style-type: none"> • US relies on imports for ~½ of aluminum • Midwest premiums jumped on 2025 tariff hikes • Energy-intensive smelting is a bottleneck 	<ul style="list-style-type: none"> • China is a major producer of epoxy and resin intermediates • US imports 40-55% from China • Tariffs on fiberglass fabrics have increased costs 	<ul style="list-style-type: none"> • The U.S. has considerable infrastructure, especially along the Gulf Coast (Texas, Louisiana). • U.S. exported ~2.4 million tons of PE to China (2024)

Applications by : *“The versatility of this material is something I’ve never seen in my career ... something that this industry has never been familiar with”*

-Ricky Haynes,
30+ years in boatbuilding industry



Speedboat



Landing Craft

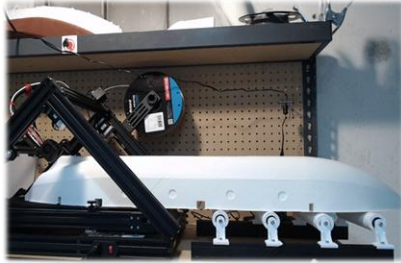


Barges

ROADMAP FOR R&D & PARTNERSHIP

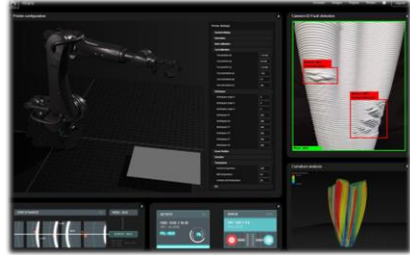
Manufacturing

✓
Prototype: "Shipyards-in-a-box"
Belt-based HDPE 3D printer



- Belt-based, Limitless Printing

**AI-Assisted
 Design & Additive Manufacturing**



- Rapid Mission-Specific Design
- Digital Twin: Print Quality & Speed ↑

**Robotic Boatyard &
 Expeditionary Microfactories**



- Forward-deployed, On-Demand Edge Manufacturing for Maritime

**Large-Scale 3D Printing &
 Advanced Materials**



- Advanced Manufacturing for A&D

Drone Tech

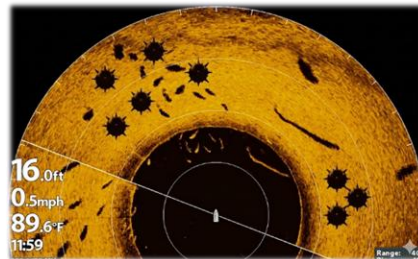
✓
**Proof of Concept:
 3D-printed Hydrofoil USV**



Supported by Founder's Inc. (SF)

- Fully-3D printed Attritable USV

HDPE Mine-Countermeasure USV



- Maritime Control & Communications
- Underwater Detection

**Automatic UAV
 Launch & Recovery USV**



- Complete Maritime ISR Package
- 24/7 Underwater & Air Coverage

Advanced Maritime Craft



- Unlock Disruptive Maritime

MARKET OPPORTUNITY

TOTAL TAM (2024–25)
\$870B – \$1.0T


PROJECTED TAM BY 2033
\$1.2T – \$1.5T

TOTAL SEGMENTS
10


AVG CAGR
4 – 8%

DEFENSE

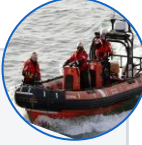
Unmanned Surface Vehicles (USV)
\$1.1B – \$2.3B
 ~10–14% CAGR · 2024–2030




Unmanned Underwater Vehicles (UUV)
\$3.3B – \$5.9B
 ~8–16% CAGR · 2024–2030



Small Watercraft
\$18B – \$40B
 ~5–10% CAGR · 2024–2032



Shipbuilding (Naval + Commercial)
\$120B – \$165B
 ~3–5% CAGR · 2024–2033 · Lead times stretched to 2028+




Defense Sub-total
~\$143B – \$213B
 Combined all defense segments

COMMERCIAL — ENERGY


Offshore Wind + Support Vessels (OSV)
\$60B – \$85B
 ~6–8% CAGR



Offshore Drilling Rigs (Jack-ups, Drillships, Semi-sub)
\$85B – \$120B
 ~6.5–8% CAGR · 2024–2033




FPSO Vessels (Floating Production & Storage)
\$22B – \$57B
 ~5–12% CAGR · 2024–2033




COMMERCIAL — OTHER


Offshore Construction (Marine, Subsea)
\$20B – \$30B
 ~5–7% CAGR



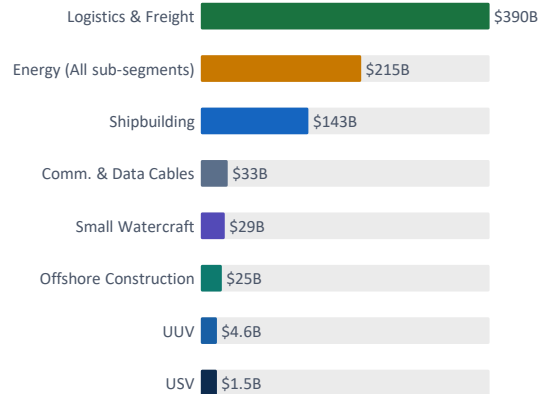
Communication & Data (Submarine Cables)
\$30B – \$35B
 ~5–10% CAGR



Logistics & Maritime Freight
\$375B – \$400B
 ~4–5% CAGR · 2024–2033



Market Size — Midpoint (\$B)



AM Manufacturing Opportunity

Highest leverage segments:
 USV/UUV hulls · FPSO hull modules · Offshore wind vessel structures · Naval shipbuilding

Lead times at major yards stretched to 2028+, creating structural demand for large-scale additive manufacturing.

Space before SpaceX vs Current Maritime: Similar Problem, Bigger Opportunity

\$2.9T

Maritime Market Size in 2030

\$630B

Space Market Size in 2030

01

Contract Type

Pre-SpaceX launch vehicles and current shipbuilding programs alike operated under cost-plus contracts, where the government absorbed all delays and overruns

02

Competition

A handful of major players dominate the industry, operating as a de facto monopoly

03

Production Style

Bespoke and artisanal. Every vessel was built differently

04

Cost & Schedule

Both industries were plagued by chronic schedule delays and cost overruns

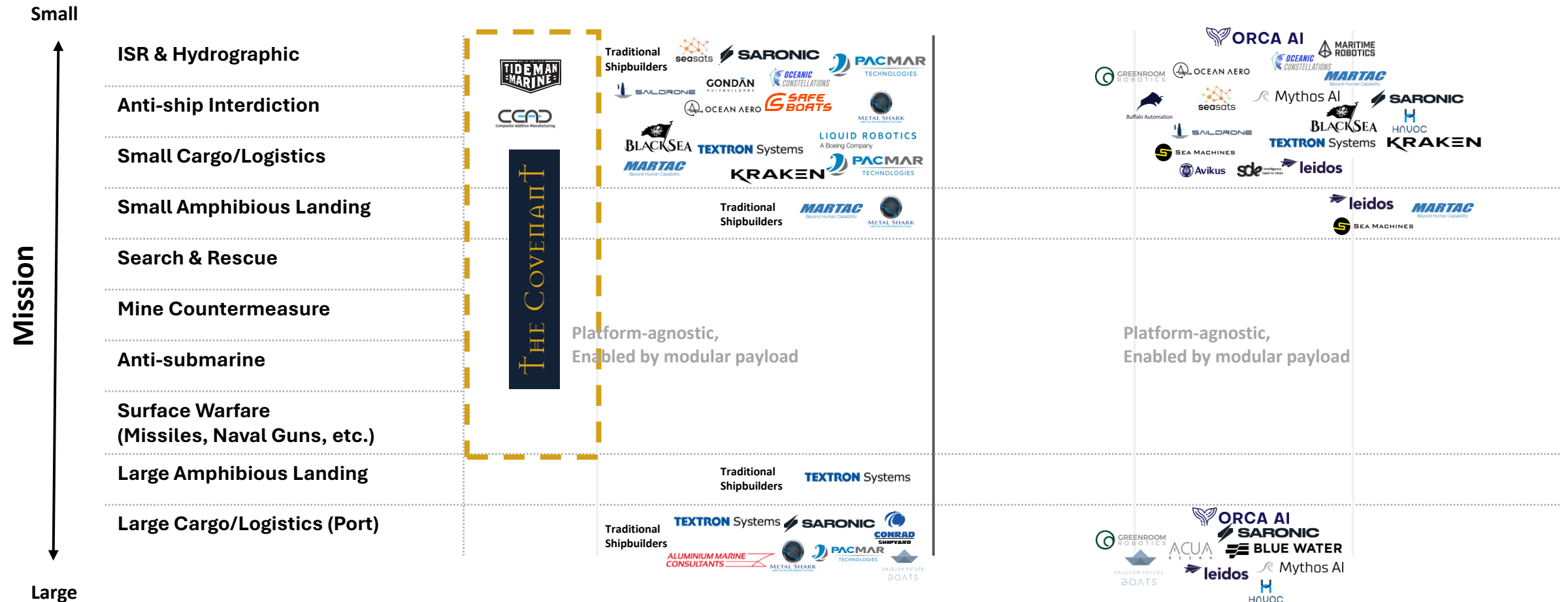
We provide Manufacturing-first USVs



Shipbuilding (Hardware)
 Non-Traditional v. Traditional



Autonomy (Software)
 Perception → Navigation → Engage



Defense-focused Founders, Friends since Highschool



Seyeon Lee



- Shipbuilding Venture Builder



REPUBLIC OF
KOREA ARMY

- B.S., Mechanical Eng. → Computer Science (AI & Robotics)
- Won a national ministry award in S.Korea at age 14 for research on 3D printing



Jacob Nyhagen

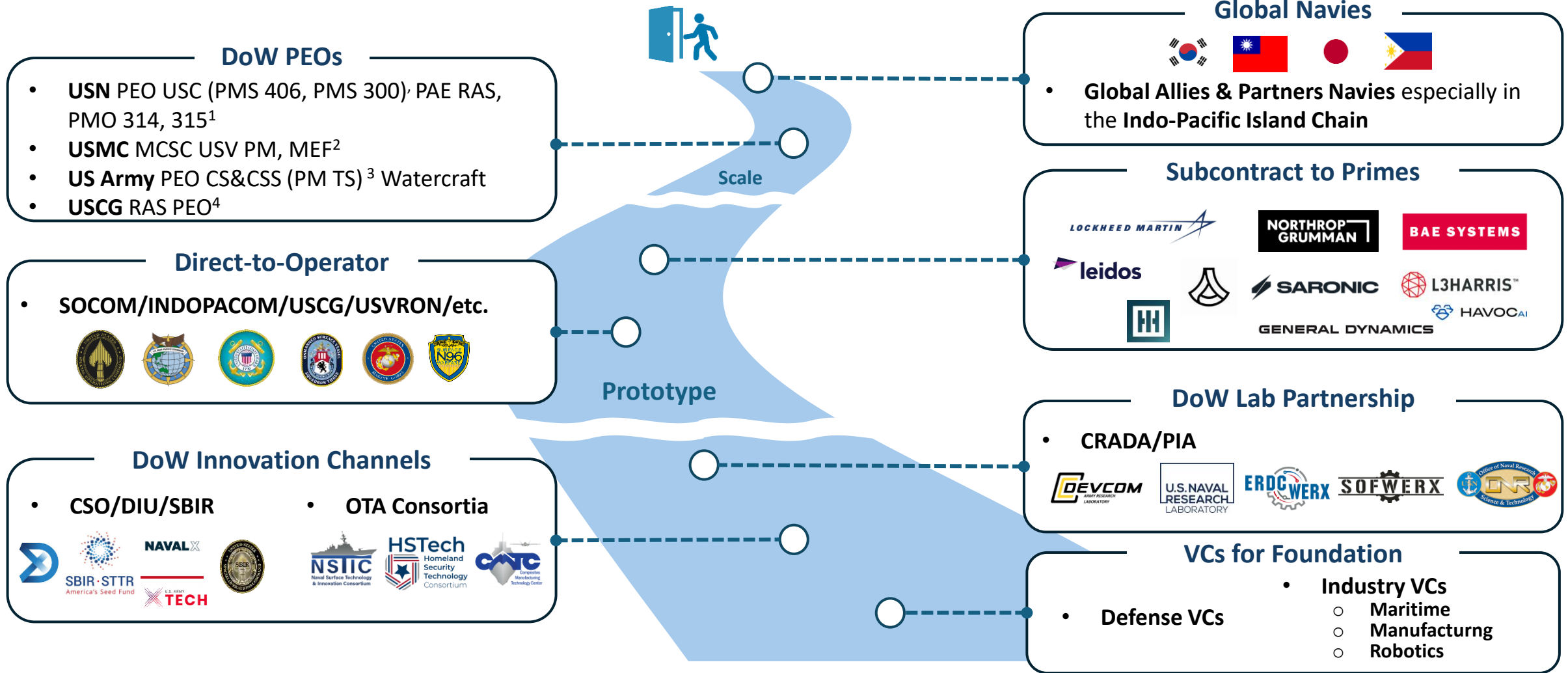


- Sentinel ICBM Engineer



- AFROTC; B.S. Aerospace Eng., M.S. Engineering Management
- Built cold-gas satellite propulsion to long-range launchers and autonomous vessels

G T M (D E F E N S E)



1. US Navy (USN) Program Executive Office Unmanned and Small Combatants (PEO USC) Unmanned Maritime Systems (PMS 406), Boats and Craft (PMS 300) PMO 314 (Logistics Over The Shore), PMO 315 (Navy Expeditionary Systems)
 2. US Marine Corps (USMC) Marine Corps Systems Command (MCSC), Marine Expeditionary Force (MEF)

3. US Army Program Executive Office Combat Support and Combat Service Support (PEO CS & CSS) Project Manager Transportation Systems (PM TS)
 4. US Coast Guard (USCG) Robotics and Autonomous Systems Program Executive Office (RAS PEO)