





FROM DATA  
INFRASTRUCTURE TO  
AI READINESS

# ENGINEERING INTELLIGENT ENTERPRISES

Let's Get Started 



The background features a large cargo ship at sea at night, illuminated by its own lights. The scene is overlaid with a complex digital interface of glowing blue lines, grids, and data points, creating a futuristic, data-driven atmosphere. The ship is positioned in the lower-left quadrant, moving towards the right.

# FROM BARRIERS TO BREAKTHROUGHS ENGINEERING THE DATA LAYER

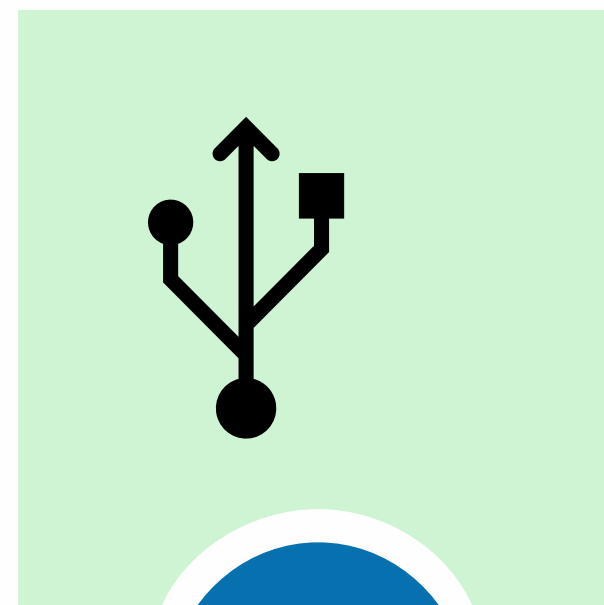
- Shipping is data-rich... but insight-poor
- Legacy systems have silo'd intelligence
- AI fails without solid data foundations



# Four pillars



Technical



Data

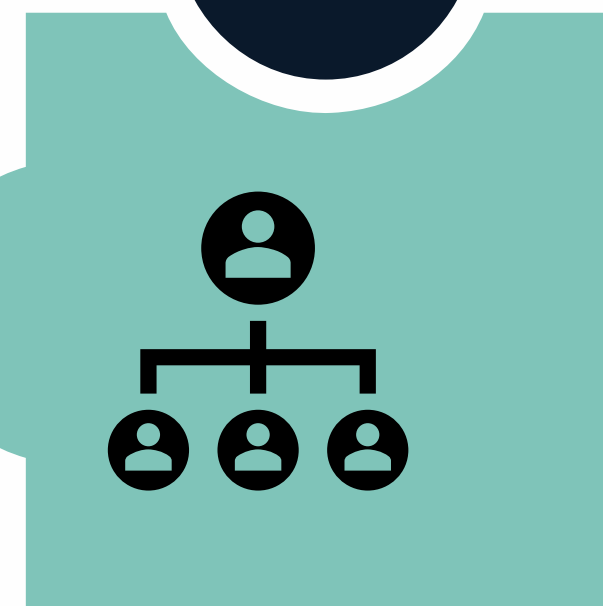


**AI READINESS IS A SYSTEM CONDITION,  
NOT A SOFTWARE LICENSE**

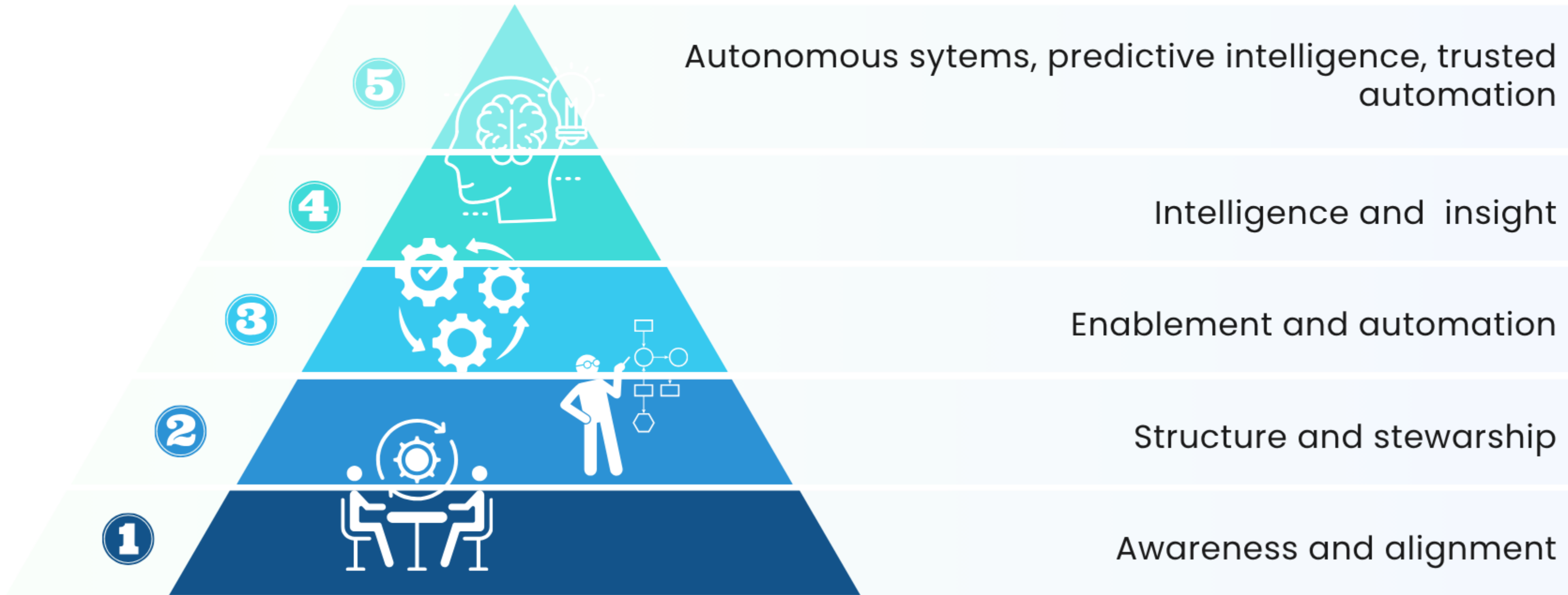
**WHAT "AI-READY"  
REALLY MEANS**



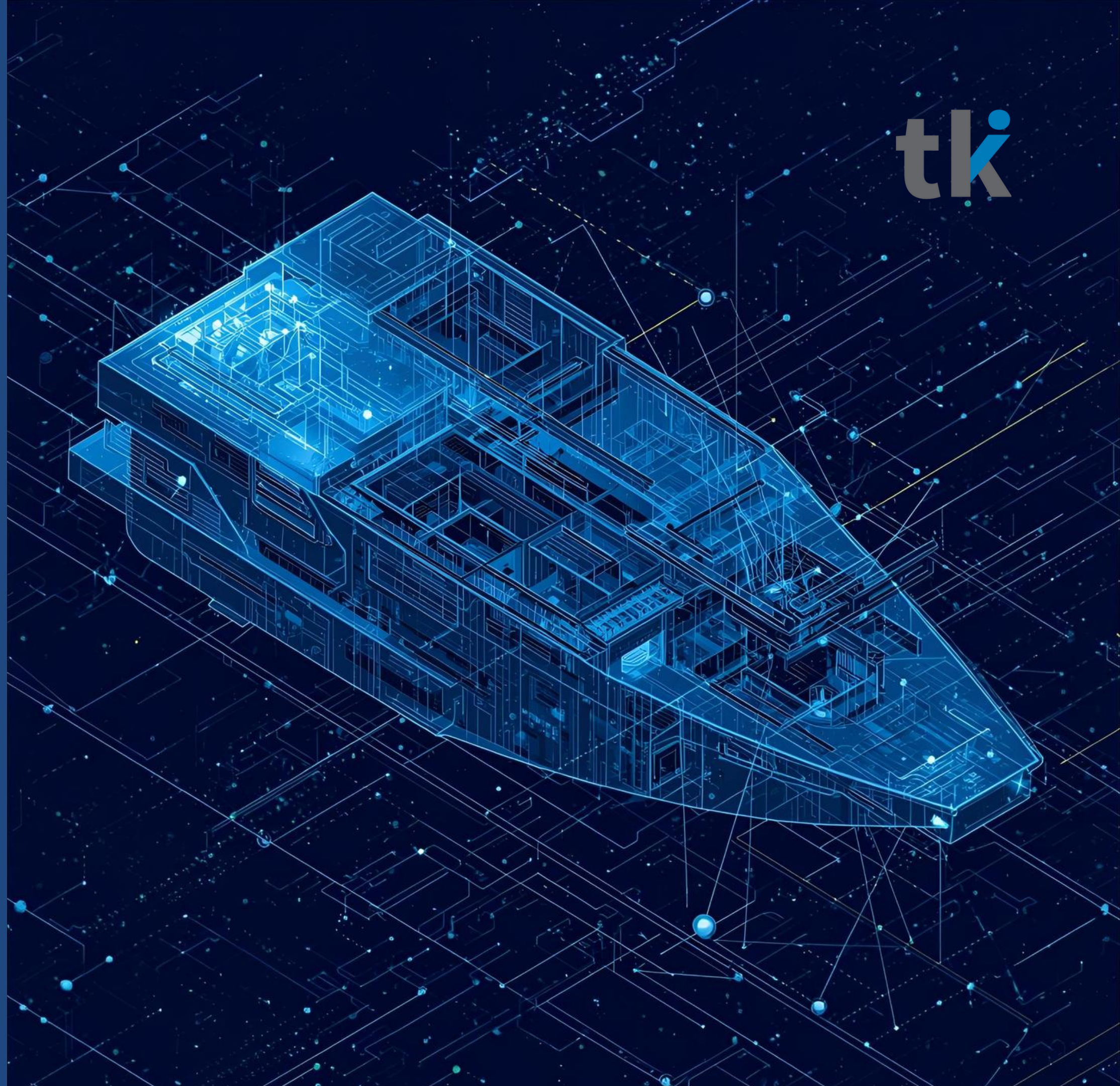
Operational



Organizational



**DATA  
INFRASTRUCTURE IS  
NOT AN OVERHEAD, IT  
IS THE KEEL THAT  
CARRIES EVERY AI  
OUTCOME**



# FROM LEGACY SYSTEMS TO AI-READY INSIGHTS



Turning scattered operational data into real-time intelligence



### Client-Vessel Summary

Client	Vessel Name	Engine Type	Annual Flag
Owner	LINA TRADER	HANDBO BMDHC C	Libya
Owner	ROSA TRADER	HANDBO BMDHC C	Libya

### Budgeted vs Actual Expenses with Profit Variance

**Budgeted Expenses** (Total: -1,159.31K)

**Actual Expenses** (Total: -1,098.86K)

### Budgeted vs Actual Revenue with Profit Variance

**Budgeted Revenue** (Total: 1,438.52K)

**Actual Revenue** (Total: 1,515.1K)

### Profit Variance by month

### Profit/Loss by month

### Client Detail

Crew	Sign On Date	Sign Off Date	Engine Type	Working Agent	Rank	Status
3388...	16/Nov/2024	28/Nov/2024	HANDBO BMDHC C	LINTECH/UK/AMR	3RD	USED
3389...	26/Nov/2024	13/Dec/2024	HANDBO BMDHC C	LINTECH/HAMB (P) (UK)/LTD	DAYBO	HRB

### Budgeted Expenses

### Actual Expenses

### Budgeted vs Actual Expenses: Detailed

GL Code	Category	Sub-Category	Budgeted	Actual
7130515040	Wages	Messman / Laundry Bonus	0	-809.68
7130515040	Wages	Messman / Laundry Bonus	0	-300
7135600015	Wages	Officers and crew wages	-438,564	-163,350.82
7135600015	Wages	Officers and crew wages	-438,564	-161,288.29
7135600020	Wages	Crew leave	0	-43,141.25
7135600020	Wages	Crew leave	0	-42,335.72
7135600025	Wages	Subsistence	0	-20,323.5
7135600026	Wages	Subsistence	0	20,027.7
<b>Total</b>			<b>-1,159,308</b>	<b>-1,098,864.23</b>

### Budgeted Revenue

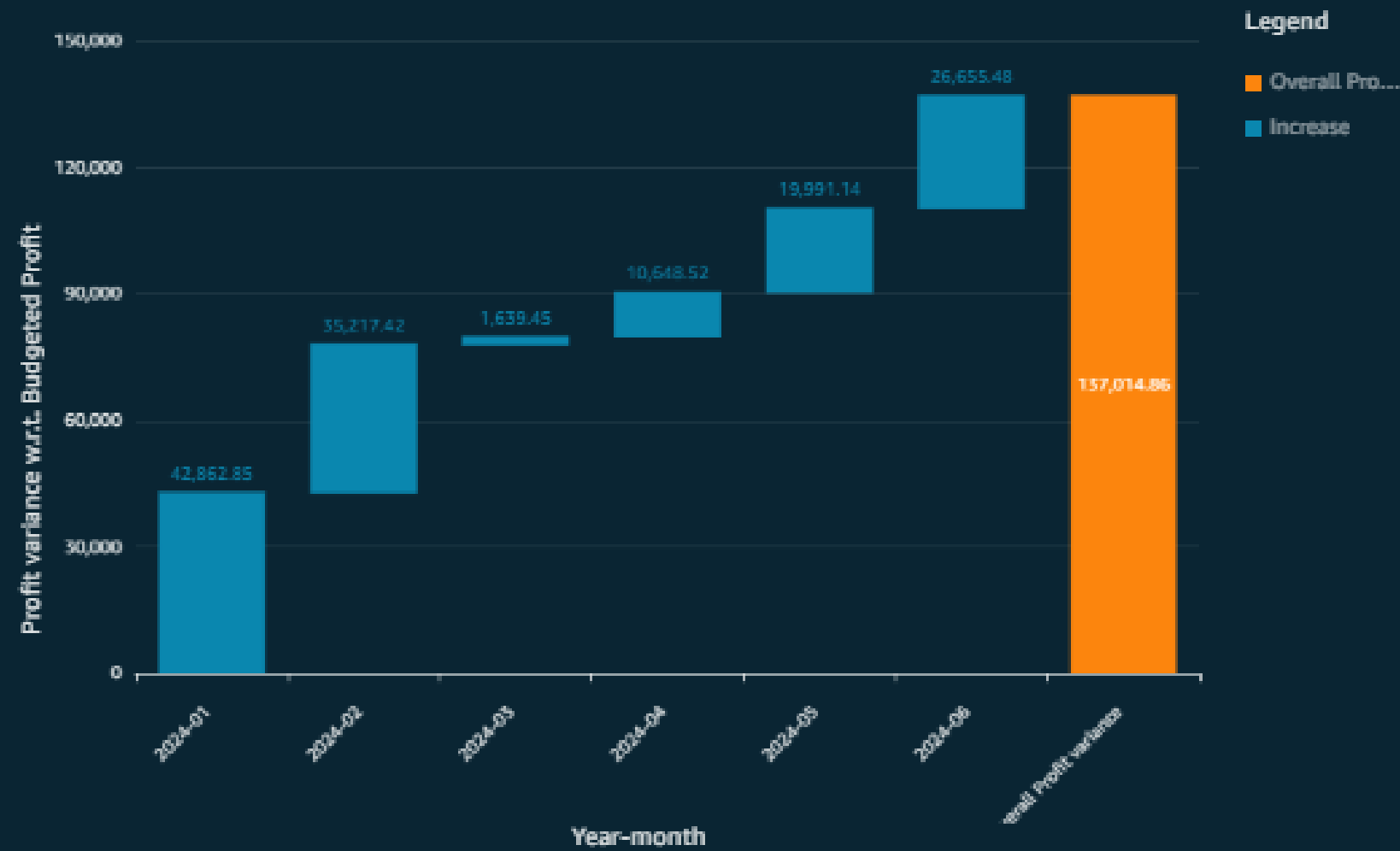
### Actual Revenue

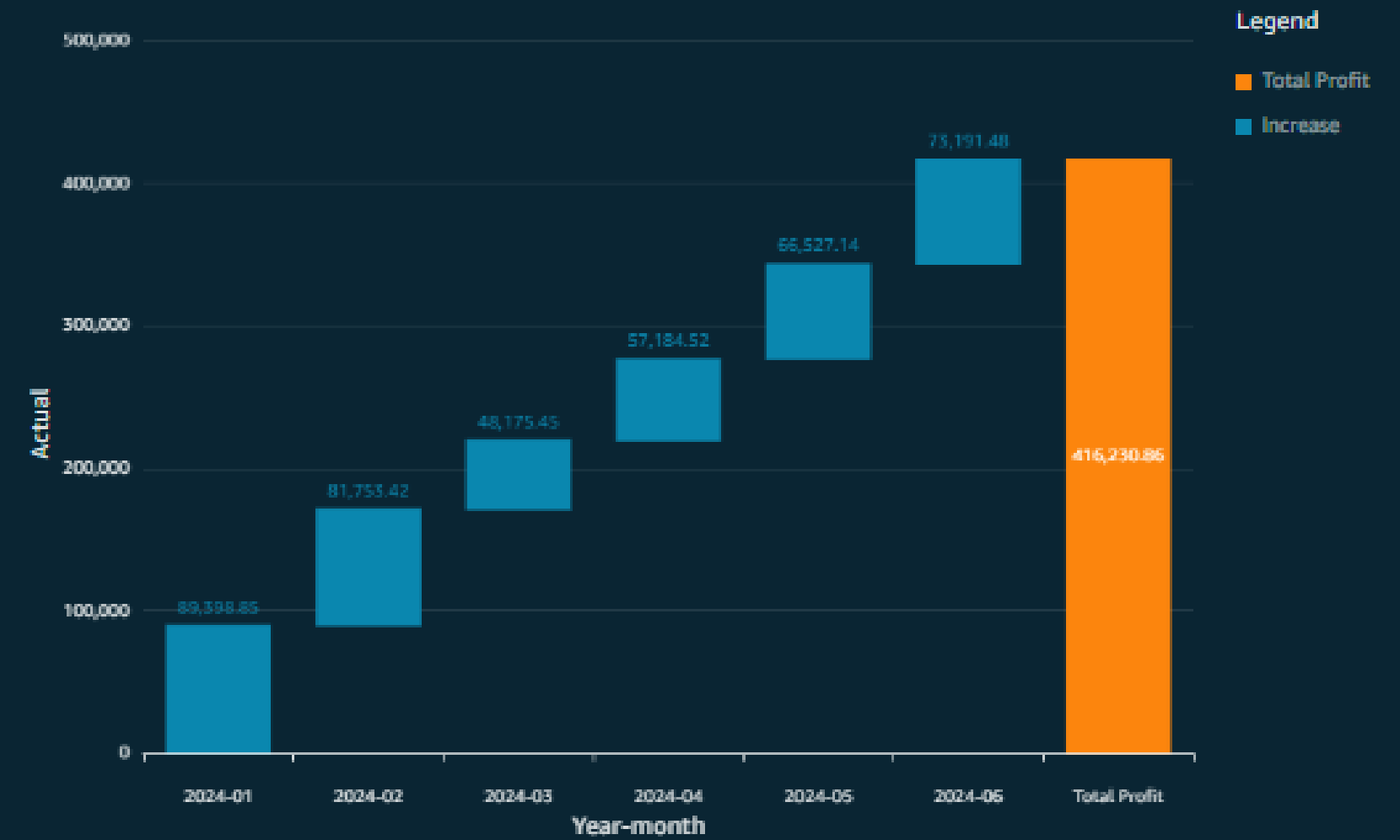
### Budgeted vs Actual Revenue: Detailed

GL Code	Category	Sub-Category	Budgeted	Actual
6000409000	Revenue	Other operating income	0	7,489.34
6000409000	Revenue	Other operating income	0	7,489.34
6030360000	Revenue	L/S Shipmanagement/ITF	622,902	622,914
6030360000	Revenue	L/S Shipmanagement/ITF	622,902	622,914
6030360002	Revenue	L/S Adj.-Differences in number of crew	0	23,768.66
6030360002	Revenue	L/S Adj.-Differences in number of crew	0	10,511.67
6030360006	Revenue	L/S Adjustments-Overlapping	0	1,444
6030360006	Revenue	L/S Adjustments-Overlapping	0	1,784.4
<b>Total</b>			<b>1,438,524</b>	<b>1,515,095...</b>

Profit Variance by month



Profit/Loss by month





Nationality Diversity

Crew skills

Manning Agents

Crew Sign-off

Controls

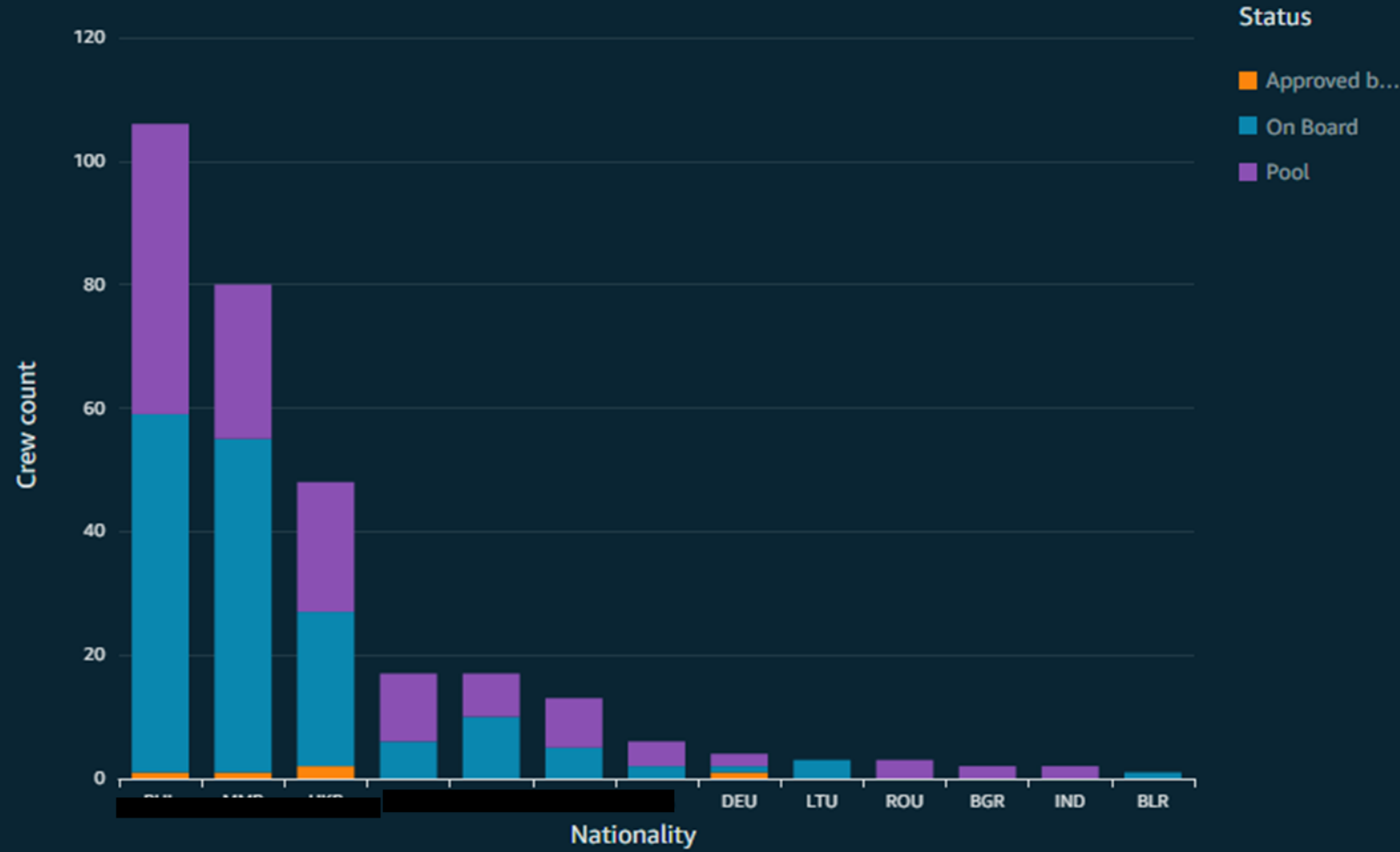
Client equals vship

Vessel Name equals All

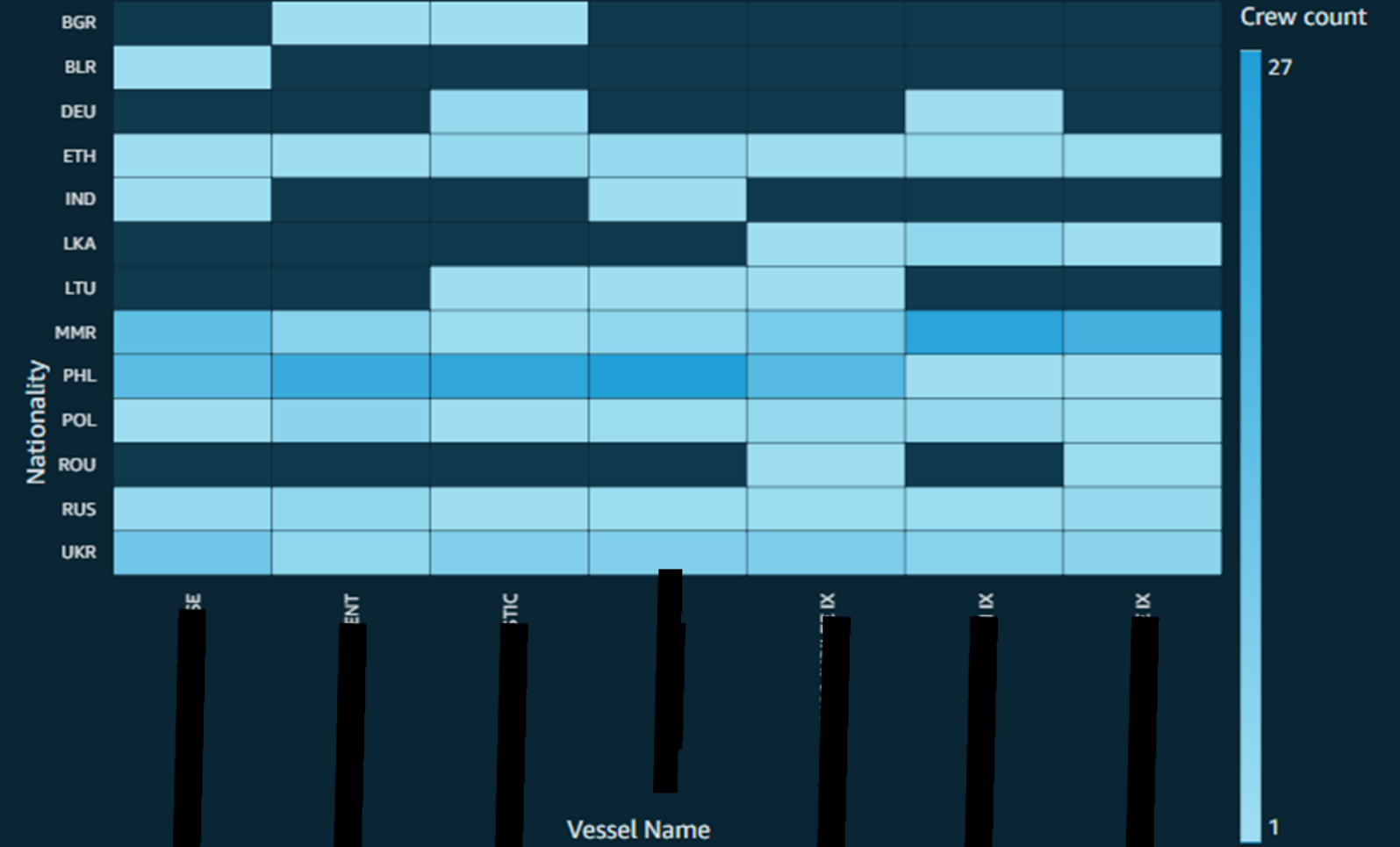
Nationality equals All

Status equals All

Crew Nationality Diversity by Status

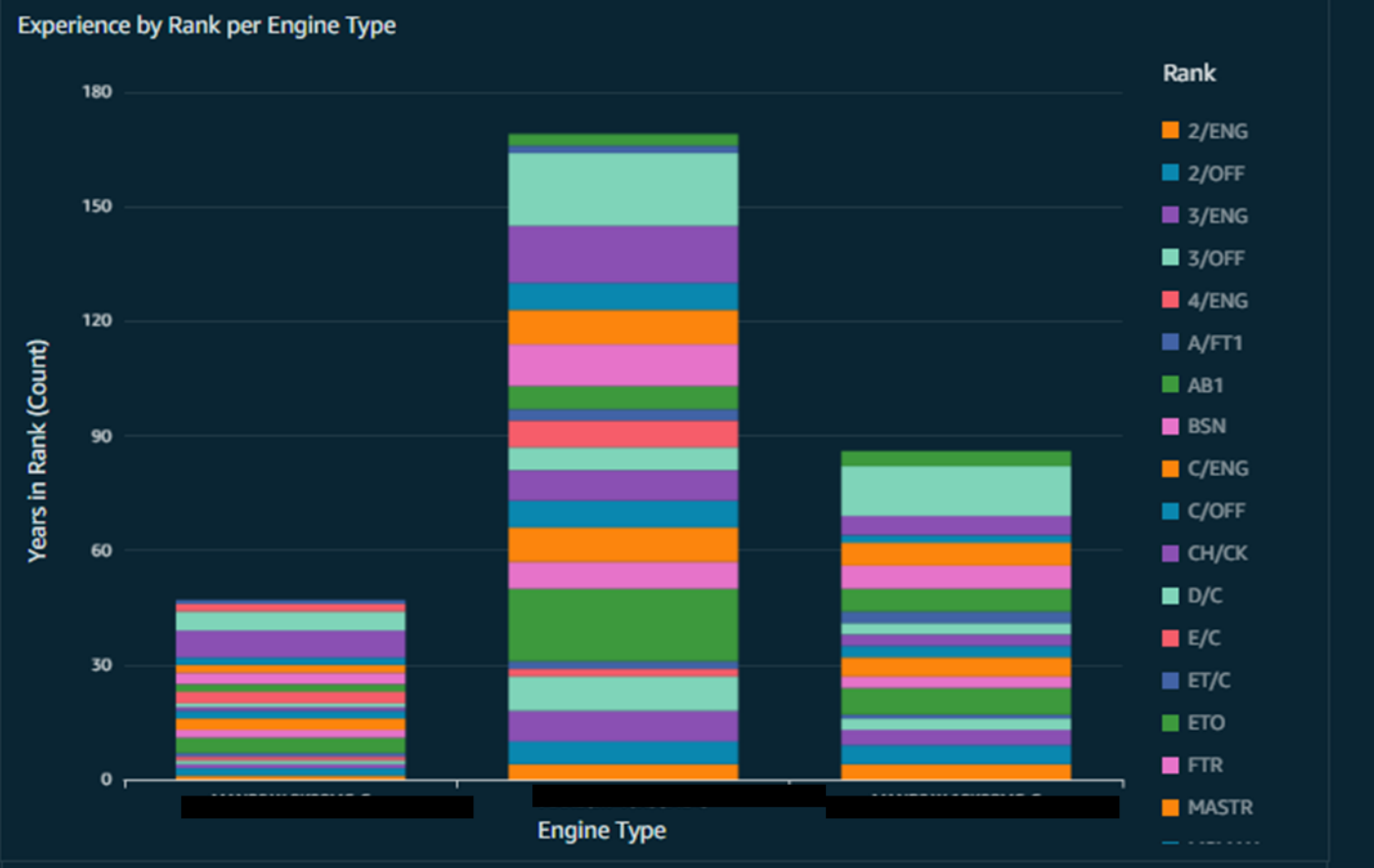


Nationality Distribution per Vessel

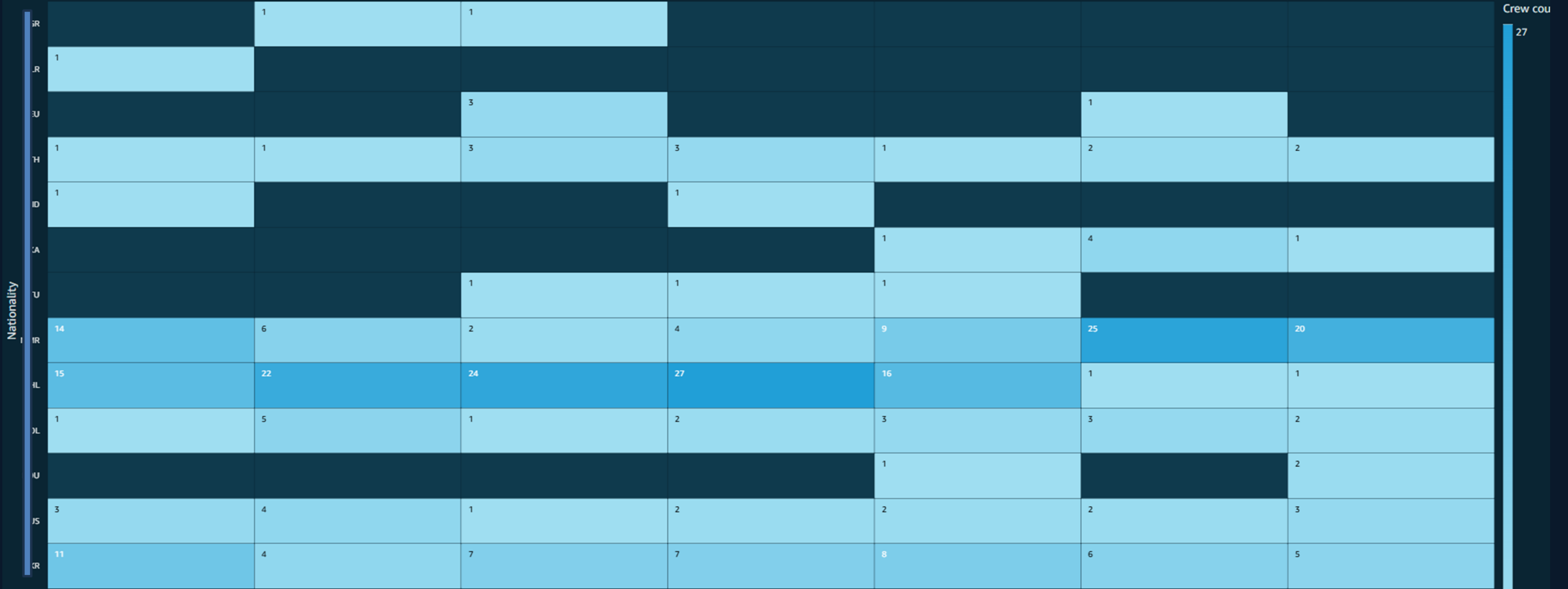


### Crew count by Rank per Engine Type

Rank	Engine Type 1	Engine Type 2	Engine Type 3	Count
2/ENG	4	4	1	19
2/OFF	5	6	2	
3/ENG	4	8	1	
3/OFF	3	9	1	
4/ENG		2	1	
A/FT1	1	2	1	
AB1	7	19	4	
BSN	3	7	2	
C/ENG	5	9	3	
C/OFF	3	7	2	
CH/CK	3	8	1	
D/C	3	6	1	
E/C		7	3	
ET/C	3	3		
ETO	6	6	2	
FTR	6	11	3	
MASTR	6	9	2	
MSMAN	2	7	2	
OLR/1	5	15	7	
OS	13	19	5	
SUPRN			2	
T/ETO		2	1	
WPR	4	3		



Nationality Distribution per Vessel



## Conversation History

What is the total revenue for the current year?

What were the operating expenses last year?

Show gross profit by quarter

What is the net income this quarter?

### Net Income

The net income for this quarter is 2.400.000

Give me a breakdown of operating expenses



How many active seafarers do we have by rank?

### Active Seafarers by Rank

Master	20
Chief Officer	25
Seaman	30
Deck Officer	35

List all crew costs for this year

### List crew costs

#### Crew Vessels with Type and manager

Vessel	Type	Manager
Ocean Export	Bulk Carrier	Shipping comy
Container Ship	Container Ship	Beta Maritime
Star Pioneer	Bulk Carrier	Gamma Line

Show crew assigned to each vessel today

AI-generated chat for demonstration only

# CHALLENGES, TRADE-OFFS & RISKS



01

## Vendor lock-in vs flexibility

Choosing one cloud or platform stack simplifies early development but limits long-term control. Maritime operations span multiple regions and partners; interoperability must outweigh convenience.

02

## Cost & ROI Timing

AI ROI comes late in the curve. Infrastructure and data prep consume most of the budget before benefits appear. CFOs must expect delayed returns and value measurement in uptime, safety, or efficiency, not only revenue.

03

## Data Privacy & Regulation

Cross-border vessel data crosses legal frameworks. GDPR, IMO cyber rules, and local port data policies differ. Each dataset must carry its consent, retention, and purpose metadata.

04

## Technical Debt & Legacy Compatibility

Integrating IoT, ERP, and port data often exposes brittle systems. Quick patches speed pilots but create long-term friction. Plan modernization in parallel with AI deployment.

05

## Model Bias, Drift & Black Box Risk

Models trained on unbalanced or stale data will fail silently. Add monitoring for drift and bias, document explainability, and keep a human-in-the-loop for operational decisions.





# THANK YOU

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