Constructing a Logistics Hub through the Integration of Remote Border Islands and Offshore Ocean Platforms

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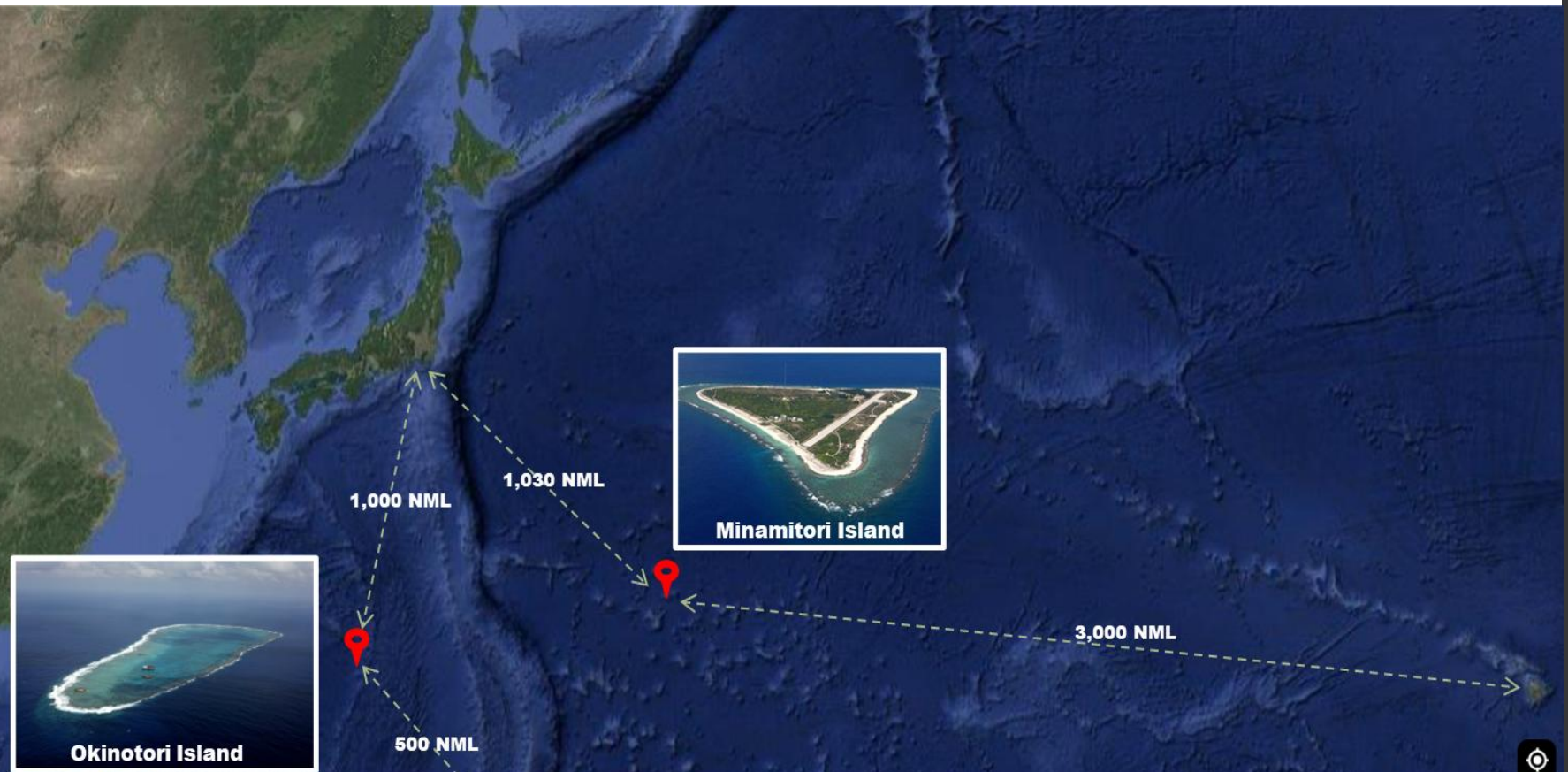
Research Question

How can logistics systems remain operational under a contested environment, where disruption is inevitable?

In contested logistics, resilience is achieved not by eliminating disruption, but by transforming its operational impact.

I used a generative AI to create this picture

- Logistical lines via trusted regions
- Protection against unpredictable attacks
- Vulnerable and inconsistent supply chains



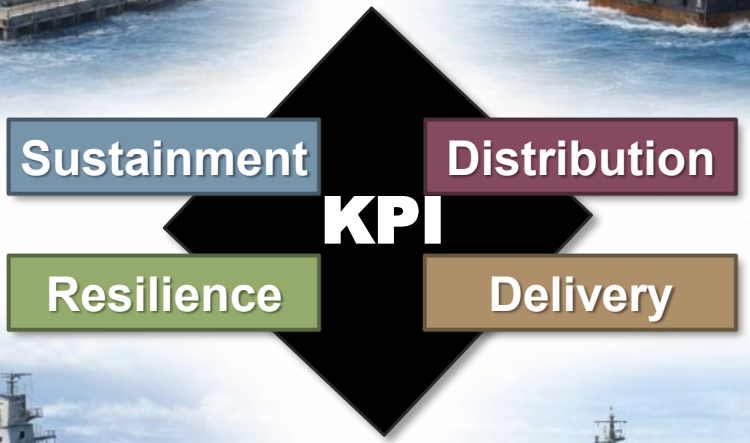
Operational Problem

Relay-based hybrid hubs transform linear supply chains into resilient, distributed logistics networks.

Fixed: artificial island/pier

Floating

: barge/ modular pontoon



Semi-Submersible

FPSO: converted tanker

Floating Production, Storage, and Offloading system

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Concept: Relay-Based Hybrid Hub

Comparative analysis: Direct vs Relay-based logistics

Military scenarios

M Series

– Contested environment with ISR/threat pressure

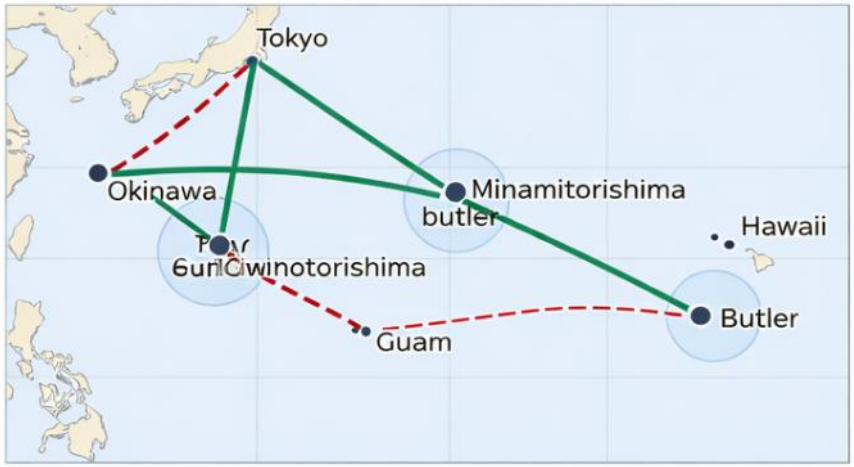
– Escalation from low to high disruption

Civil/disaster scenarios

C Series

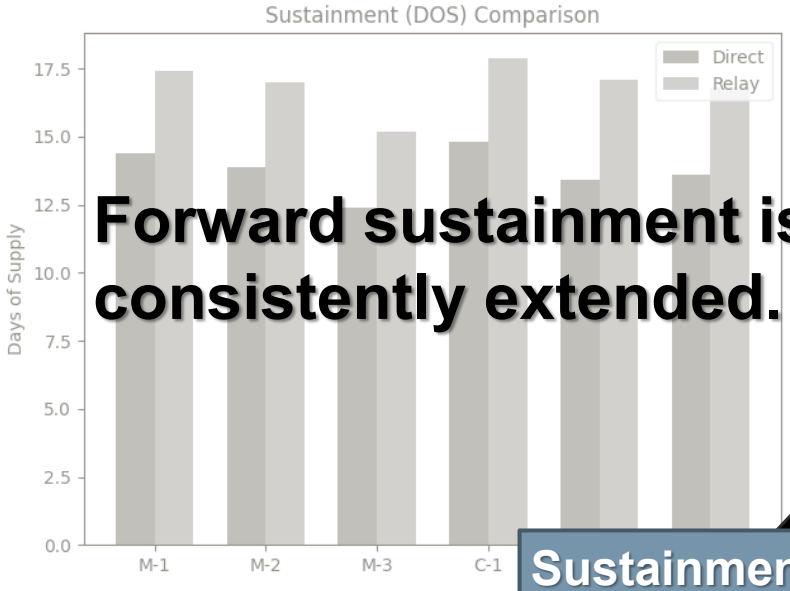
– Infrastructure disruption without adversary intent

– Port damage and cascading failure

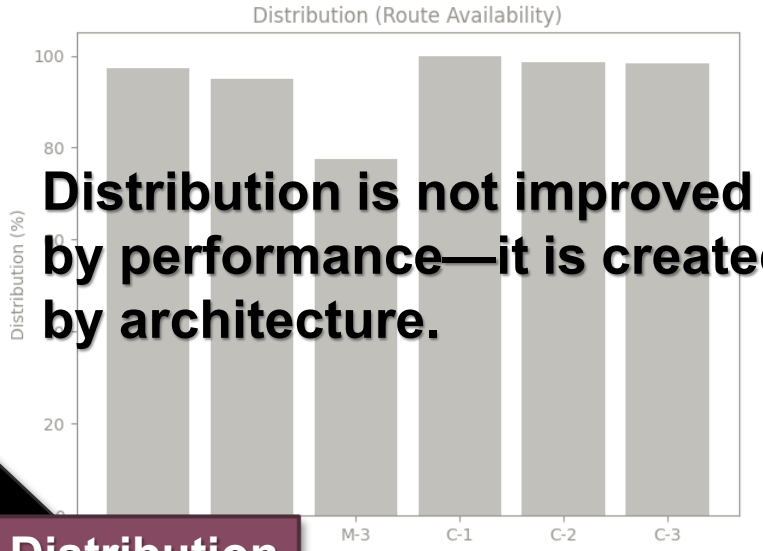


Panel #16: Constructing a Logistics Hub

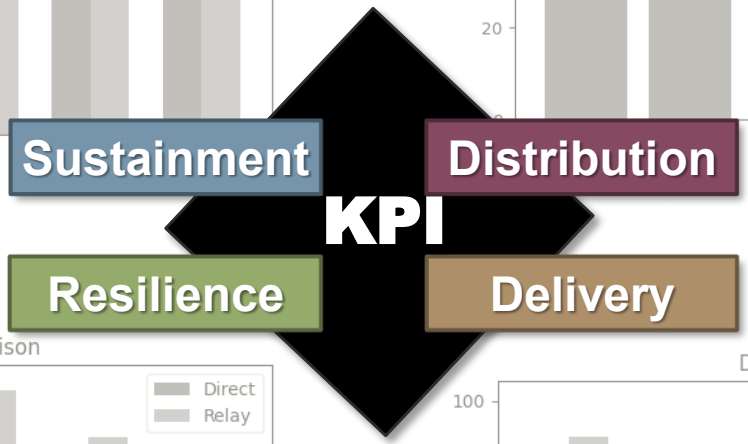
Result

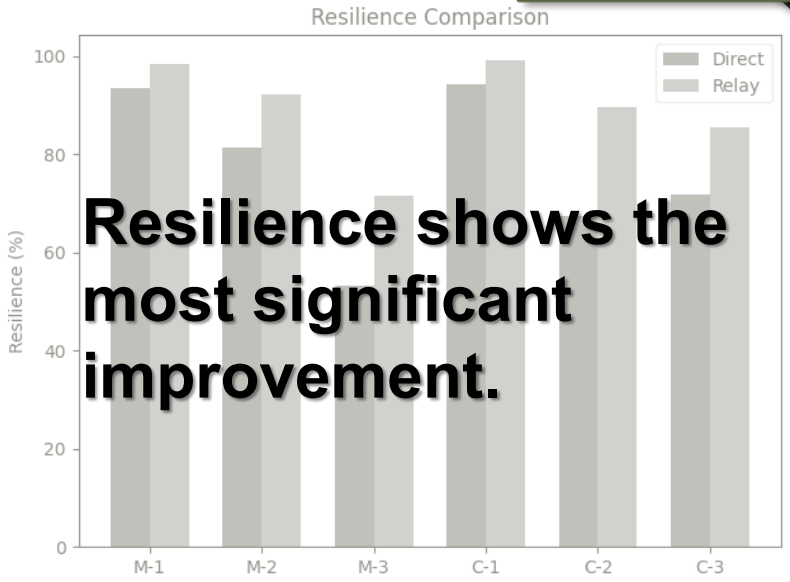


Forward sustainment is consistently extended.

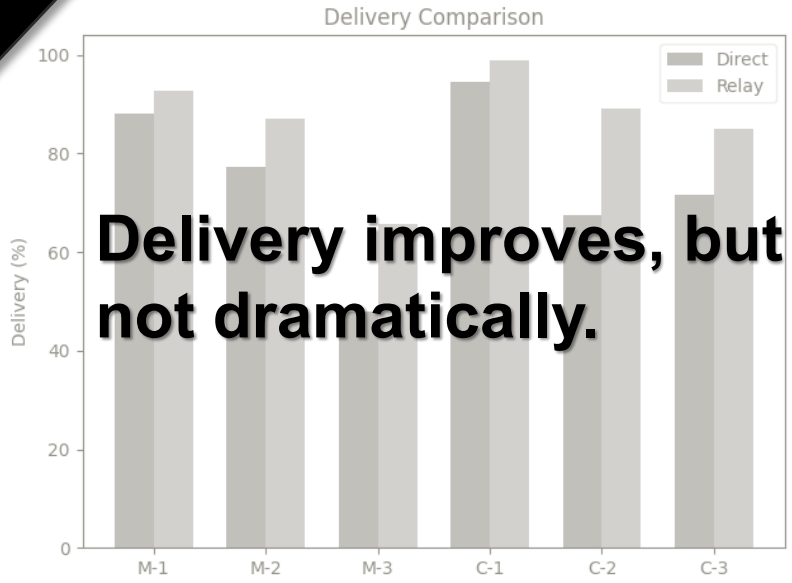


Distribution is not improved by performance—it is created by architecture.





Resilience shows the most significant improvement.



Delivery improves, but not dramatically.

Disruption is inevitable—but its impact can be engineered

Relay networks maintain operations under stress

Their value emerges in high-threat environments

I used a generative AI to create this picture

Protection:

How survivable are ocean-based hubs?

Unmanned Feasibility:

Can autonomous or reduced-crew platforms actually sustain operations?

Alliance Application:

Can this be implemented as a Japan-U.S. logistics architecture?

Scalability:

How can the concept evolve over time?

Discussion Point @MCSC