BREAKBULK NEXTWAVE EDUCATION DAY

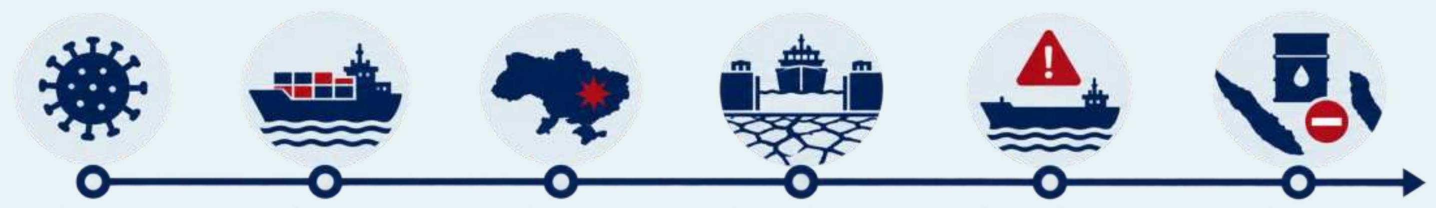
TEXAS A&M UNIVERSITY GALVESTON CAMPUS

HOUSTON MARITIME Center & Museum

SAN JACINTO COLLEGE
BACHELOR OF APPLIED TECHNOLOGY - LOGISTICS & SUPPLY CHAIN MANAGEMENT

THE GLOBAL SUPPLY CHAIN CHALLENGE

Six Years of Continuous Shocks:



’20 COVID-19 PANDEMIC | ’21 Suez Canal Blockage | ’22 Ukraine War | ’23-’24 Panama Canal Drought | ’23-’24 Red Sea Crisis | ’26 Strait of Hormuz Blockade

Mapping Disruptions

Skyrocketing Logistics Costs:

Cargo diverted around blocked chokepoints **adds up to 10 to 14 days to transit times** and roughly $1 million **per voyage**. **Project cargo is hit hard:** its multipurpose vessel fleet is already too thin for demand, booked on fixed-date charters and with 19 multipurpose vessels stranded in the Persian Gulf. Contract law hasn't caught up, shipping's only dedicated canal-disruption clause, **CONWAY**, dates to 1968 and it doesn’t account for scarcity-driven cost spikes or true multi-chokepoint failure.

Cascading Cross-Sector Disasters:

Regional conflicts **disrupt more than shipping lanes**: gas turbines and power-generation equipment sit on the critical path of plant construction, so combined **transit and port delays** can **push commissioning back four to eight weeks** with project cargo risking to move behind food, medicine, and fuel in the queue.

RESILIENCY-FOCUSED RESPONSE

Just-In-Time to Just-In-Case:

Pure cost-cutting is shifting to disruption-mitigation. Corporations are **building up safety stocks**, **diversifying suppliers** across multiple regions, **investing** in real-time **visibility** including satellite **tracking** and **favoring smaller vessels** spread across more carriers.

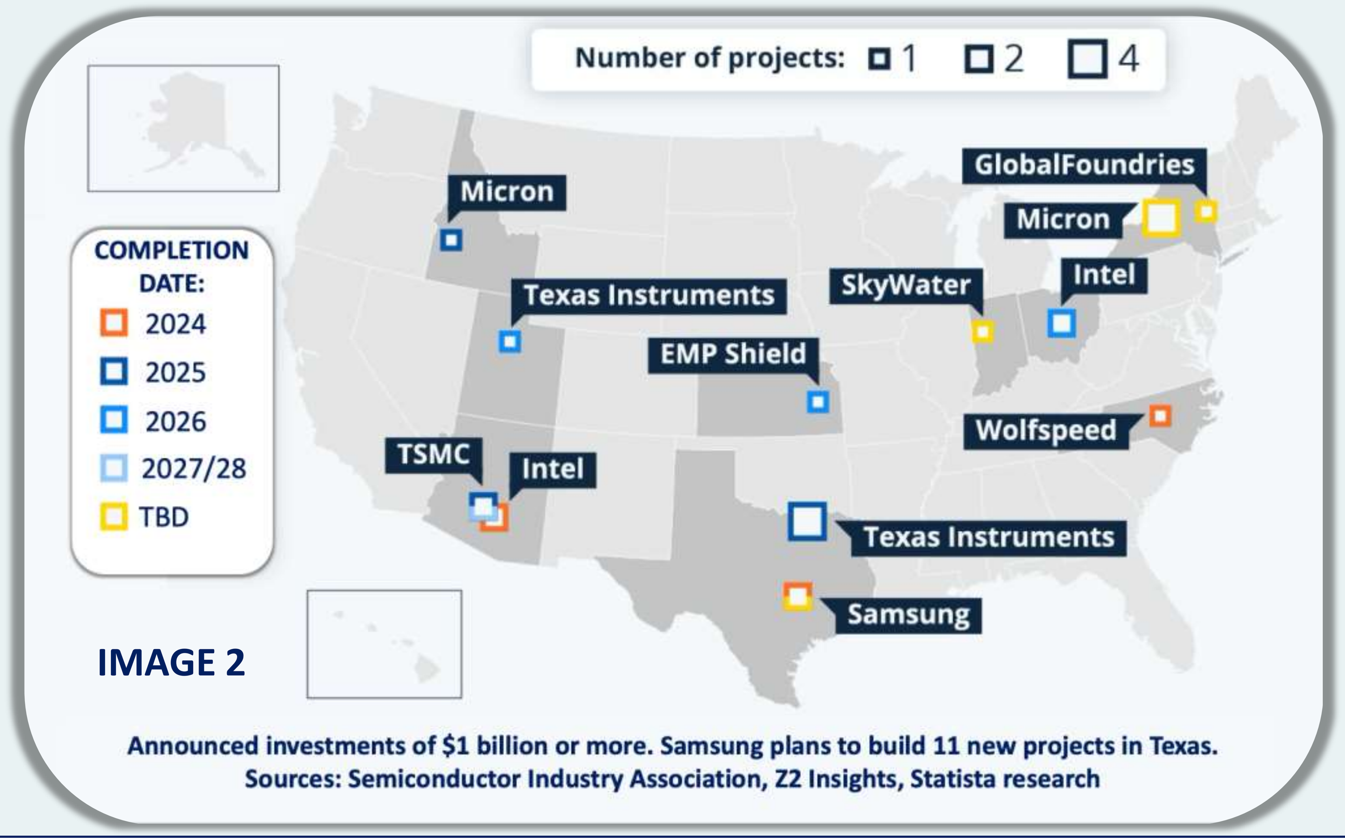
Aggressive Nearshoring and Friendshoring:

Geopolitical decoupling is accelerating. U.S.-China trade fell by 30%, with **two-thirds of that volume being replaced by friendly nations,** reinforced by **Executive Order 14420**, which now **bars foreign-linked transformers, generators, and battery systems** from the U.S. power grid due to national security concerns.

The Rise of Sovereign Reindustrialization Policies:

Governments are actively repatriating critical advanced technologies and industrial infrastructure via massive public subsidies. Key policies include the **U.S.** $52.7 billion **CHIPS and Science Act** and the **Inflation Reduction Act (IRA).**

U.S. Chip Manufacturing Facilities



DISRUPTION-DRIVEN OPPORTUNITIES

$820B
Announced private investment in CHIPS projects

Semiconductor investment in the U.S. has been accelerated, with **160 projects across 30 states** supporting **122K jobs**. With the **MPV orderbook** too slim for rising demand and **deliveries dropping through 2027**, **shippers** who **lock in charters now** will beat the coming **capacity crunch**.

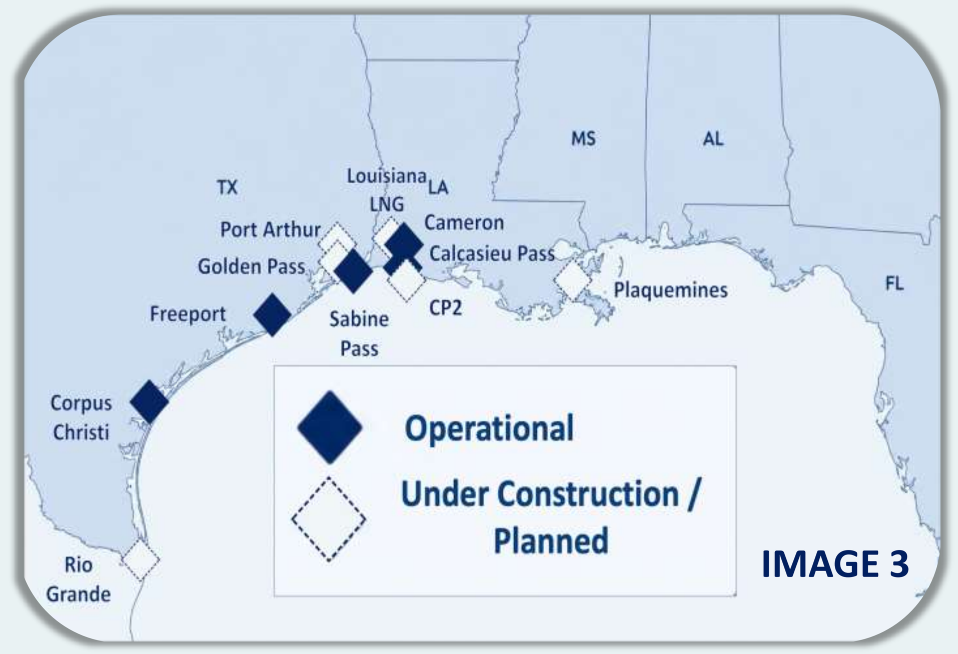
$40.9B
Foreign Direct Investment Captured by Mexico

Mexico’s manufacturing growth strengthens its role as a **key North American industrial hub** creating opportunities, **with Volvo and Kia investing** $1.6 Billion in **new and expanded production plants** turning **nearshoring** into **freight demand**.

$588B
For Ukraine’s Reconstruction Estimates

Ukraine's reconstruction is **backed** by a proposed $800 billion **BlackRock-led investment framework**, with capital already committed from Turkey, the EU, and U.S. Ukraine will need to replace **686 destroyed port facilities** and nearly **24,000 rail infrastructure objects**.

Gulf Coast LNG Facilities and Projects



$20.7B
Largest financing in U.S. banking history for Venture Global's CP2 LNG export terminal project.
The region is now mid-way through its **most significant wave of energy capital projects in over a decade**

U.S. LNG export capacity is set to be **30 billion cubic feet per day by the early 2030s**.

Professional Research

References

The Disruption-Driven Opportunities:
The Impact of Maritime Bottlenecks on U.S. Industrial Infrastructure

Elieser Castellanos, Christina Leen, Caleb Bihogo & Juan Zapon
Faculty Advisor: Professor John Hark – Texas A&M University
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