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Navigating the Dual Storm:

How Mid-Market U.S. Companies Can Build Supply Chain Resilience Through AI Strategy

The Red Sea Crisis • The Strait of Hormuz Crisis • Strategem's 5AI Framework

For CEO-Level Leadership • Mid-Market U.S. Companies ($500M–$5B Revenue)

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EXECUTIVE SUMMARY

Two separate maritime crises are simultaneously placing pressure on global supply chains, with measurable consequences for mid-market U.S. companies. In the Red Sea, sustained disruption to commercial shipping since late 2023 has reduced Suez Canal container transits by approximately 75% compared to prior-year levels, pushing freight rates on Asia-to-Europe lanes to approximately five times their pre-crisis levels and extending transit times by up to 14 days on affected routes. At the same time, escalating regional conflict has severely disrupted shipping through the Strait of Hormuz since February 2026, affecting approximately one-fifth of global seaborne oil trade and constraining the supply of a range of industrial commodities produced in the Persian Gulf.

For companies in the $500 million to $5 billion revenue range, these developments translate into higher freight costs, extended lead times, elevated raw material prices, and in some sectors, supply shortages of specific inputs. Mid-market companies tend to have less buffer against such pressures than large enterprises: thinner margins, leaner inventory management teams, and less leverage in carrier and supplier negotiations.

This paper sets out the documented nature and scale of both disruptions, assesses their implications for key mid-market industry sectors, and explains how Strategem's 5AI Framework — Assess, Align, Architect, Automate, Accelerate — provides a structured pathway to building AI-enabled supply chain capability suited to mid-market organisations.

SECTION I: TWO SIMULTANEOUS DISRUPTIONS

Supply chain disruptions typically affect a single route, commodity, or region. The current situation is different in that two distinct crises are operating in parallel, each affecting a different dimension of global trade. One involves the container shipping routes that carry finished goods and components between Asia, Europe, and North America. The other involves the energy and commodity flows that underpin industrial production across the global economy. Understanding both — separately and in combination — is essential for mid-market executives assessing their exposure.

Disruption One: The Red Sea and Suez Canal

Since late 2023, attacks on commercial vessels in the Red Sea and Gulf of Aden have led the majority of major carriers to reroute their vessels. The Suez Canal, which ordinarily handles approximately 12% of global merchandise trade, saw container transits fall from over 2,000 per month to approximately 900 by late 2024 — a reduction of roughly 75% year-on-year, as documented by project44 and corroborated by Wikipedia's aggregation of shipping authority data [3, 7]. Freight rates on Asia-to-Europe container lanes rose to approximately five times pre-crisis levels at their peak, though rates have since partially moderated [3].

Ships that previously transited the Suez Canal have in many cases been rerouted around Africa's Cape of Good Hope, adding approximately 11,000 nautical miles and up to 14 additional days to affected voyages, according to data from UNCTAD and project44 [3, 5]. The practical consequences include longer and less predictable lead times, higher freight and fuel costs, and additional strain on port infrastructure along alternative routes. For companies operating just-in-time inventory models, extended and variable transit times create meaningful operational challenges.

Key Data Points	Suez Canal container transits: approximately 75% below 2023 levels. Asia-to-Europe freight rates: approximately 5× pre-crisis levels at peak. Cape of Good Hope reroute: adds approximately 11,000 nm and up to 14 days. Transit times to the U.S. East Coast: extended by up to 47% on affected lanes. Sources: project44 [3], UNCTAD [5], Wikipedia [7].

Disruption Two: The Strait of Hormuz

The Strait of Hormuz is a narrow waterway connecting the Persian Gulf to the Gulf of Oman and the Arabian Sea. According to the U.S. Energy Information Administration and UNCTAD, approximately 20 million barrels of oil and petroleum products transited the Strait daily in 2024, representing roughly 20% of global seaborne oil trade. The Strait also carries approximately 19% of global liquefied natural gas (LNG) trade, according to the International Energy Agency [5, 6].

Escalating conflict in the region has severely disrupted commercial shipping through the Strait since February 2026. UNCTAD reported that ship transits fell from approximately 130 per day to around 6 per day at peak disruption — a reduction of approximately 95% [5]. Brent crude oil prices exceeded $100 per barrel in March 2026 and reached approximately $126 per barrel at their peak, as documented by Wikipedia and CNBC [7, 9]. The International Energy Agency described the disruption as among the most significant to global energy supply in modern history, though the duration and ultimate economic impact will depend on how long the disruption persists [5, 6].

Beyond oil and gas, the Gulf region is a significant exporter of several industrial commodities whose supply chains are now under strain:

- Aluminum: The Middle East accounts for approximately 20–21% of U.S. unwrought aluminum imports, according to CNBC and industry data. Suspension of deliveries by some producers has prompted buyers to seek alternative sourcing [9].
- Fertilizers and urea: The Gulf accounts for approximately 20% of global seaborne fertilizer exports and approximately 46% of global urea trade, according to the World Economic Forum. Rising prices have been noted in key agricultural markets [6].
- Polyethylene: According to academic sources cited by CNBC, approximately 85% of Middle East polyethylene exports transit Hormuz, affecting feedstocks for packaging and a range of manufactured goods [9].
- Sulfur, methanol, MEG, and helium: These industrial inputs — used in semiconductor manufacturing, chemicals, textiles, and industrial processes — face varying degrees of supply constraint, though the severity differs by commodity and alternative sourcing availability [6].

Key Data Points	Strait of Hormuz: carries ~20% of global seaborne oil trade and ~19% of global LNG trade [5, 6]. Ship transits at peak disruption: fell approximately 95% from normal levels [5]. Brent crude: exceeded $100/barrel, peaked near $126/barrel [7, 9]. The Dallas Federal Reserve estimates a sustained disruption lasting two quarters could reduce global GDP growth by approximately 0.3 percentage points [8].

It is worth noting that both disruptions are dynamic situations. The Red Sea crisis has seen periods of relative de-escalation and re-escalation since 2023. The Hormuz situation remains fluid as of the date of this paper. The figures cited here reflect documented peak or recent conditions; the actual ongoing impact for any given business will depend on the specific routes, suppliers, and commodities involved.

The two disruptions interact in a reinforcing way: higher energy prices, driven by Hormuz constraints, increase the fuel costs associated with the longer Cape of Good Hope reroutes necessitated by the Red Sea crisis. Companies facing both elevated freight costs and higher raw material or input costs are under pressure on multiple dimensions simultaneously.

SECTION II: THE TWO DISRUPTIONS AT A GLANCE

The panels below summarise the documented key facts for each disruption. Where both crises are relevant to a business, the combined effect on costs, lead times, and input availability is greater than either disruption in isolation.

CRISIS 1 Red Sea / Suez Canal	
What	Sustained attacks on commercial shipping in the Red Sea, beginning late 2023
Route hit	Asia → Suez Canal → Europe and U.S. East Coast
Key data	Canal transits down ~75%; container freight rates up approximately 5× on Asia-Europe lanes [3, 7]
Reroute	Many carriers divert via Cape of Good Hope, adding approximately 11,000 nm and up to 14 days [3, 5]
Consequence	Longer lead times, elevated freight costs, disrupted just-in-time inventory cycles
Most exposed	Electronics, retail, automotive, pharmaceuticals — firms importing finished goods or components from Asia

CRISIS 2 Strait of Hormuz	
What	Escalating regional conflict has severely disrupted shipping through the Strait since February 2026
Route hit	Persian Gulf → Arabian Sea → Asia, Europe, and global commodity markets
Key data	Ship transits fell from ~130/day to approximately 6/day at peak disruption; Brent crude exceeded $100/barrel [5, 7]
Commodities	Oil, LNG (~19% of global trade), aluminum, fertilizer, polyethylene, sulfur, and helium face supply constraints [6, 9]
Consequence	Energy cost inflation feeds into all transport modes; industrial input shortages affect downstream manufacturers
Most exposed	Industrial manufacturing, food and agriculture, chemicals, aerospace, energy-intensive industries

The demand-side dimension is also worth noting. Several major economies that are significant buyers of U.S. mid-market goods — including South Asian, Southeast Asian, and certain Middle Eastern markets — are themselves under economic pressure from higher energy costs. UNCTAD estimates that global merchandise trade growth may slow from approximately 4.7% in 2025 to 1.5–2.5% in 2026 under current disruption scenarios [5]. For mid-market companies with meaningful international sales, softer demand in energy-importing markets is an additional consideration.

SECTION III: INDUSTRY EXPOSURE BY SECTOR

The table below maps the documented supply chain exposure for ten mid-market industry sectors, together with the primary AI application most relevant to each sector's risk profile. Exposure ratings reflect the evidence base for disruption at current levels; they are not predictions of future severity. Illustrative examples are representative of operational challenges being reported, not specific named companies.

Industry Sector	Exposure Red Sea / Hormuz	Documented Supply Chain Impact	Primary AI Application	Illustrative Industry Example
Industrial Manufacturing	Red Sea **HIGH** Hormuz **HIGH**	Component lead times extended by Red Sea rerouting; aluminum and steel feedstocks from Gulf face supply constraints; energy inflation raises input costs [3, 6]	Monitoring specialist alloy deliveries and tracking energy-driven input cost movements in near real time	An auto parts manufacturer reports production delays when specialist alloy deliveries from Gulf-region suppliers are suspended during peak disruption
Electronics & Technology	Red Sea **HIGH** Hormuz **MED**	Asia-sourced components face transit time increases of up to 55% on some lanes; helium and sulfur used in semiconductor manufacturing face Hormuz-related supply risk [3, 9]	Tracking helium and sulfur supply levels; predicting fulfillment delays on Asia–U.S. East Coast lanes	An electronics distributor experiences fulfillment delays as Asia–U.S. East Coast transit times extend by approximately 11 days on rerouted vessels
Food & Agriculture	Red Sea **MED** Hormuz **HIGH**	Gulf region accounts for ~20% of global seaborne fertilizer exports; urea prices have risen materially; petrochemical-derived packaging costs also elevated [6, 9]	Dynamic sourcing analysis for urea and fertilizer to manage critical planting-window procurement	A grain producer faces higher input costs as urea availability from Gulf suppliers tightens during the spring planting window
Retail & Consumer	Red Sea **HIGH** Hormuz **MED**	Seasonal import schedules disrupted by extended transit times; freight rates on Asia-Europe lanes rose approximately 5× at peak [3, 7]	Optimising seasonal import schedules and modelling container cost scenarios against retail pricing margins	A furniture retailer must choose between absorbing significantly higher container costs or adjusting retail pricing, compressing margins either way
Chemicals & Materials	Red Sea **MED** Hormuz **HIGH**	MEG, methanol, polyethylene, and sulfur — key Gulf exports — face supply disruption; raw material cost inflation is notable across chemical value chains [6, 9]	Identifying and qualifying alternative sourcing options for MEG, methanol, and polyethylene across non-Gulf suppliers	A specialty chemicals distributor seeks alternative sourcing for MEG as Gulf inventories tighten and delivery timelines become uncertain
Pharmaceuticals	Red Sea **HIGH** Hormuz	Active pharmaceutical ingredients (APIs) from South and Southeast Asia	Managing API safety stock levels and monitoring cold chain	A pharmaceutical company extends API safety stock holdings

	MED	face transit delays; cold chain integrity is at greater risk on longer rerouted voyages [3, 5]	integrity risk on extended Cape of Good Hope voyages	to manage transit uncertainty, increasing working capital requirements
Aerospace & Defense	Red Sea MED Hormuz HIGH	Aluminum and specialty metals from Gulf producers face supply constraints; titanium and advanced alloy supply chains are under additional pressure [6, 9]	Adjusting manufacturing schedules dynamically based on aluminum and titanium availability signals from Gulf producers	An aerospace sub-tier supplier reports delays in aluminum alloy deliveries, requiring schedule adjustments on component manufacturing commitments
Energy & Utilities	Red Sea LOW Hormuz HIGH	LNG procurement is directly affected by Hormuz disruption (~19% of global LNG trade); fuel costs for energy-intensive operations have risen with oil prices [5, 6]	Monitoring LNG procurement costs and modelling contract renegotiation scenarios against spot market conditions	An industrial gas company faces materially higher LNG sourcing costs and initiates contract renegotiations with energy suppliers
Logistics & Distribution	Red Sea HIGH Hormuz HIGH	Core operations affected by carrier rerouting, port congestion on alternative routes, and significant freight rate volatility across major trade lanes [3, 5]	Shorter-term freight contracting analysis and continuous port congestion monitoring to optimise carrier selection	A third-party logistics provider moves to shorter-term freight contract periods as rate predictability on key lanes deteriorates
Construction & Infrastructure	Red Sea MED Hormuz HIGH	Steel and aluminum inputs from Gulf producers face supply constraints; petrochemical-derived construction materials are also affected [6, 9]	Reviewing project delivery schedules against specialty steel and aluminum lead time signals from Gulf producers	A building materials supplier reports extended lead times on specialty steel deliveries, requiring project schedule reviews with clients

Exposure rating: **HIGH** = Documented, direct impact on this sector **MED** = Significant indirect or secondary exposure **LOW** = Limited or delayed exposure at current disruption levels

The picture varies considerably by sector. Industrial manufacturing, electronics, retail, logistics, and pharmaceuticals face the most direct Red Sea exposure due to their reliance on Asia-origin goods and components. Food and agriculture, chemicals, aerospace, energy, and construction are more exposed to the Hormuz-related commodity and energy constraints. Several sectors face material exposure on both dimensions simultaneously.

SECTION IV: THE ROLE OF AI IN SUPPLY CHAIN RESILIENCE

Artificial intelligence is not a solution to geopolitical disruption. The underlying causes of both crises are well outside the control of any individual business. What AI can do is help companies manage the consequences more effectively — by improving visibility into what is happening, enabling faster and better-informed decisions, and reducing the manual workload associated with navigating a more complex and volatile operating environment.

This section outlines the practical AI capabilities most relevant to the current supply chain context, and the evidence for their effectiveness. It does not make the case that AI adoption is simple or universally straightforward — successful implementation depends on data readiness, organisational alignment, and realistic scoping of what AI can and cannot do.

Documented AI Capabilities in Supply Chain Management

The following table outlines four documented AI capabilities and how each applies specifically to the disruptions described in this paper. These capabilities are supported by published research and operational evidence; their effectiveness in any given organisation will depend on data readiness, implementation quality, and the specific use cases deployed [10].

AI Method	What It Does	Application in the Current Crisis Context
Continuous Monitoring	AI tracks freight rates, port congestion, commodity prices, and supplier financials simultaneously and continuously — flagging emerging issues earlier than periodic manual review.	Monitoring Red Sea lane rate movements, Cape of Good Hope port congestion, and Gulf commodity price signals across multiple data streams in parallel.
Adaptive Forecasting	AI incorporates real-time signals — including energy prices and macroeconomic indicators from customer markets — to update demand and inventory forecasts dynamically.	Adjusting inventory positions and procurement plans as energy price movements from the Hormuz disruption feed into transport costs and customer market conditions.
Scenario Modelling	AI-powered tools simulate the financial impact of disruption scenarios and evaluate alternative sourcing or routing strategies before commitment.	Modelling the cost implications of a sustained Hormuz closure, a further freight rate escalation, or a key supplier suspension — and comparing response options.
Workflow Automation	Routine procurement and logistics tasks — generating RFQs, comparing carrier options, triggering threshold alerts — are partially automated, freeing teams for judgement-intensive decisions.	Automating carrier switching recommendations when freight rates breach defined thresholds; generating alternative supplier RFQs when delivery signals deteriorate.

The scale of benefit from AI investment in supply chains varies significantly by company, sector, and the specific capabilities deployed. It would be misleading to suggest that AI adoption alone can neutralise the

impact of disruptions of the current scale. What the evidence does support is that companies with better supply chain visibility and faster decision-making capabilities are better positioned to respond to disruption than those operating with limited data and slower processes.

Evidence Base	McKinsey’s research on supply chain resilience found that companies with more resilient supply chains recover EBIT more quickly following major disruptions than less prepared peers, and attributed part of that advantage to digital and AI capability [2]. The Supply Chain Management Review notes that AI adoption in supply chains is shifting the function from reactive to more predictive operating models, though implementation complexity and data readiness remain common barriers [10].

SECTION V: STRATEGEM'S 5AI FRAMEWORK

Strategem AI is a boutique consultancy that focuses exclusively on AI strategy and implementation for mid-market companies. Its team includes executives with operational backgrounds in manufacturing, supply chain management, distribution, chemicals, and technology — bringing domain knowledge alongside AI expertise. The firm works with companies in the $500 million to $5 billion revenue range, where the organisational and resource constraints are different from both smaller businesses and large enterprises.

The 5AI Framework is Strategem's structured methodology for taking a mid-market organisation from an initial assessment of AI readiness through to the deployment and scaling of AI capabilities. It is designed to be sequenced and phased, so that each stage builds on the previous one and value is delivered incrementally rather than at the end of a long implementation programme.

A1	**ASSESS**	Evaluate AI maturity across six dimensions: strategic alignment, data quality, technical infrastructure, talent, process automation, and leadership readiness. Outputs: AI Maturity Scorecard and Business Case Prioritisation Matrix, identifying where AI can deliver the most immediate value.
A2	**ALIGN**	Establish C-suite sponsorship, define AI ownership across functions, and build the AI Vision and Strategy Blueprint. Develop a phased roadmap covering near-term initiatives, mid-term capability building, and longer-term enterprise integration.
A3	**ARCHITECT**	Design the data strategy, governance framework, and technology stack. Select platforms and AI models appropriate to the organisation's specific supply chain use cases. Built to integrate with existing ERP and operational systems rather than replace them.
A4	**AUTOMATE**	Deploy AI into operational workflows: freight cost monitoring, supplier risk tracking, demand signal analysis, and inventory optimisation. Pilots run in controlled environments, refined through structured feedback, then integrated into daily operations with appropriate change management.
A5	**ACCELERATE**	Expand validated pilots across the organisation. Standardise AI workflows. Measure ROI against agreed KPIs. Explore emerging capabilities — including Generative AI for scenario modelling and digital twin simulation for strategic planning — as the organisation's AI maturity grows.

Applying the 5AI Framework in the Current Context

Assess — Understand Your Specific Exposure Before Acting

The starting point is a structured evaluation of where the organisation currently stands on AI readiness and, in the context of the current disruptions, where its supply chain is most exposed. Strategem's AI Maturity Assessment covers six dimensions: strategic alignment, data quality, technical infrastructure, talent, process automation, and leadership readiness — each scored against relevant benchmarks. The supply chain risk mapping identifies which freight corridors carry the greatest cost exposure, which suppliers sit in geographically concentrated risk zones, and where customer demand may be affected by energy-driven

economic pressures in export markets. The output is an AI Maturity Scorecard and a prioritised set of use cases, so that investment is directed at the areas where it will make the most practical difference.

Align — Establish Clear Direction Before Investing in Technology

A common reason AI initiatives underperform is insufficient alignment among senior leadership on what they are trying to achieve and who is responsible for what. The Align phase establishes C-suite sponsorship, clarifies AI ownership across functions, and produces an AI Vision and Strategy Blueprint with a phased roadmap. For supply chain resilience specifically, this means the CEO, CFO, and head of supply chain share a common understanding of the risk exposure, the AI capabilities being developed, and the timelines and KPIs against which progress will be measured.

Architect — Build the Right Foundation

AI capability depends on the underlying data and technology infrastructure. The Architect phase designs the data strategy, governance framework, and technology stack appropriate to the organisation's size and specific use cases. Strategem's approach is to build modular architectures that connect to and extend existing ERP and operational systems, rather than requiring wholesale replacement. For supply chain resilience, the architecture delivers visibility into freight costs, supplier status, and inventory positions — the data foundation that makes predictive and responsive decision-making possible.

Automate — Deploy AI into Operational Workflows

The Automate phase moves AI from design into operational use. Strategem runs pilots in defined, controlled environments, uses structured feedback to refine model outputs, and then integrates AI-driven decision support into operational workflows. In the current disruption context, this includes tools that monitor freight rate movements and flag optimal routing decisions, systems that track supplier delivery performance and flag concentration risk, and demand sensing tools that update inventory recommendations as market signals evolve. Change management — helping operational teams understand, trust, and use AI outputs appropriately — is an integral part of this phase, not an afterthought.

Accelerate — Scale What Has Been Validated

Once pilots demonstrate measurable value against agreed KPIs, the Accelerate phase expands them across the organisation. AI workflows are standardised across departments, and ROI is tracked on a continuous basis. More advanced capabilities — such as Generative AI for scenario narration, agentic AI for more autonomous workflow execution, and digital twin simulation for strategic planning — are introduced as the organisation's AI maturity and data infrastructure develop to support them.

For organisations that need ongoing AI leadership but are not ready to hire a full-time Chief AI Officer, Strategem offers a fractional CAIO engagement — providing strategic continuity as the AI programme matures and the external environment evolves.

SECTION VI: CONCLUSIONS AND CONSIDERATIONS FOR LEADERSHIP

The two disruptions described in this paper are ongoing and, at the time of writing, their duration and ultimate impact remain uncertain. What is clear from the available data is that both have already had measurable effects on freight costs, commodity prices, and supply chain lead times for companies operating in affected sectors.

For mid-market CEOs, the practical questions are straightforward: How exposed is our business to these disruptions, specifically? Which supply corridors, suppliers, and input categories carry the greatest risk? Where is our visibility into these risks currently weakest? And what capabilities — whether AI-enabled or otherwise — would most improve our ability to respond?

AI-enabled supply chain management offers documented advantages in visibility, decision speed, and operational efficiency. These advantages are real, but they require genuine investment in data infrastructure, organisational alignment, and implementation. Companies that have built these capabilities before a disruption are in a stronger position than those that begin the process after costs and lead times have already moved against them. That is the principal argument for acting during a period of disruption rather than waiting for conditions to stabilise.

Strategem's 5AI Framework offers mid-market companies a structured, sequenced path to building these capabilities — starting with a clear-eyed assessment of where they stand today, and building progressively toward a supply chain function that is better informed, more adaptive, and more resilient to the kind of geopolitical uncertainty that characterises the current environment.

Strategem offers an executive briefing for qualifying mid-market leadership teams, including a preliminary assessment of supply chain risk exposure relevant to both disruptions. Further information is available at **www.strategem.ai**.

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