

When Geopolitics Hits the Supply Chain: Redundancy vs. Optimization

Why thinking only about cost efficiency leaves you stranded when a canal closes.

Supply Chain Risk · JIT Failure · Resilience Planning · Inventory Strategy

The newsletter for executives who prefer robust contingency planning over optimized, brittle efficiency.



The Problem: When 'Optimized' Becomes Fragile

For decades, the goal on the shop floor was simple: eliminate waste. We leaned into Just-in-Time (JIT) manufacturing as a way to keep inventory low and capital fluid. It worked beautifully in an era of predictable shipping lanes and stable trade routes. In that environment, JIT wasn't just efficient; it was the gold standard.

But there is a difference between "lean" and "fragile." When we stripped away every ounce of buffer to achieve maximum efficiency, we didn't just remove waste—we removed our safety net. We built a system that works perfectly as long as everything goes right. The moment something goes wrong outside the factory walls—a canal is blocked, a port is congested, or a region becomes unstable—the lack of "waste" (which was actually hidden insurance) becomes an immediate crisis for production.

We have mistaken a high-performance machine running in perfect conditions for a robust system capable of handling real-world friction. A lean process that cannot survive a three-week delay at sea is not a sophisticated strategy; it is a gamble. When "optimized" means you have exactly enough parts to

finish the day’s run and nothing more, any disruption isn't just an inconvenience—it’s a line stoppage. We must recognize that while efficiency is about doing things right today, resilience is about being able to do them at all tomorrow.

Naming the Failure: The Single Point of Dependency

The core failure here is **The Single Point of Dependency**. This occurs when a critical component or path in your production chain relies on a single source, route, or provider without an active alternative. We often tell ourselves we have "diverse" suppliers, but if every one of those suppliers relies on the same shipping lane or the same raw material hub, that diversity is an illusion.

We see this most clearly when global events turn local bottlenecks into systemic failures. When a major canal becomes impassable, it isn't just a logistics problem; it is a failure to account for geographic and geopolitical risks in our primary planning. We chose the cheapest route over the safest one, and now we are paying the price in lost production time.

The Comforting Narrative	The Hard Truth
"We have multiple suppliers for this component."	All three suppliers source their raw materials from the same port that is currently blocked.
"Our logistics partner handles the shipping complexity."	Our contract doesn't include a pre-negotiated alternative route if the primary lane closes.
"The delay is just a temporary blip in the schedule."	The lack of safety stock means every day of delay is a day we cannot fulfill orders or hit targets.

Why Does the Fix Resist? The Cost Illusion

If you know that a single point of dependency can shut down your line, why do many organizations still operate this way? It comes down to **The Contract of Convenience**.

It is very easy to justify "efficiency" in a boardroom because it shows up as a win on a quarterly spreadsheet. Cutting inventory costs and squeezing shipping margins looks like good management. Conversely, building redundancy—holding extra stock, qualifying secondary suppliers, or paying for faster but less efficient transport routes—looks like "waste." It is harder to explain to an executive why you want to spend \$500k more on inventory just in case a ship gets stuck halfway across the world.

We treat these costs as optional luxuries rather than what they actually are: insurance premiums. Just as a company wouldn't cancel its fire insurance because it hasn't had a fire this year, we shouldn't strip out our supply chain "buffer" just because the seas have been calm for the last three years. We must stop viewing redundancy as an inefficiency and start seeing it as the cost of staying in business when the world gets messy.

The Shift to Managed Risk: Four Pillars of Resilient Supply Chains

To move from a fragile, optimized-only model to one that can withstand external shocks, we have to build on four specific pillars. This isn't about abandoning lean; it's about layering resilience over our core processes.

1. **Diversified Routing:** Do not rely on a single transit path. If your primary route is through the Suez Canal or via a specific port in Asia, you must have an active, pre-vetted secondary route—even if it costs more per unit to maintain that option.
2. **Strategic Buffer Stocking:** Identify "critical-path" components—those items with long lead times or high risk of disruption. For these parts, we move away from JIT and toward a "just-in-case" model. We hold enough stock to weather a 30, 60, or 90-day delay without stopping the line.
3. **Supplier Mapping (The Nth Tier):** You need to know who your supplier's suppliers are. If your primary vendor is in a safe zone but their sub-tier supplier of raw chemicals is in a high-risk zone, you still have a single point of failure. We must map the chain down to the source.
4. **Agile Response Protocols:** This is the "plan taped to the machine." When a disruption happens, your team shouldn't be scrambling for answers. You should have a pre-approved playbook that dictates exactly how to pivot—which supplier to call first, which lane to switch to, and what production changes are needed immediately.

Immediate Actions for Your Next Gemba Walk

Don't wait for the next headline to start your assessment. Use your next walk through the facility or your next meeting with the procurement team to conduct these specific checks:

- **Identify the "Showstoppers":** Walk the line and identify every component that, if missing for 48 hours, would stop production today. These are your high-priority items for redundancy analysis.
- **Audit Lead Times:** Ask your logistics lead to provide a list of parts with lead times exceeding six weeks. Any part in this category should be evaluated for "strategic buffer" status rather than JIT delivery.
- **Map the Source:** Pick three key components and demand to see where they come from—not just who sells them to you, but where the raw materials originate. Identify if any of these rely on a single geographic choke point.
- **Quantify the Gap:** Calculate how many days of production your current "on-hand" inventory provides for those critical components. If that number is less than 30 days and the part has a high risk profile, it's time to adjust the stocking targets.

Beyond the Crisis: Making Resilience Standard Practice

The goal is to move resilience from an "emergency response" to a standard operating procedure (SOP). In many plants, we only talk about supply chain risks when there is a crisis in the news. By then, it's too late; you are in damage control mode, not planning mode.

We need to bake risk assessment into our regular continuous improvement cycles. When we perform an FMEA (Failure Mode and Effects Analysis), we shouldn't just look at machine failures or human errors on the floor. We must include "external supply failure" as a high-probability/high-impact risk factor.

When you build resilience into your SOPs, it becomes part of the culture. It means that when an engineer suggests keeping extra stock for a critical component, they aren't being "wasteful"—they are following the established standard for ensuring production continuity. We want to move away from reactive firefighting and toward a disciplined system where we expect things to go wrong outside our walls, and we have already built the capacity to handle it before it happens.

Call to Action

What single point of failure (port, canal, supplier) currently keeps your operations up at night? Share your thoughts with us and help others plan for the inevitable disruption.

newsletter@sixsigmakaizen.com

Newsletter replies: newsletter@sixsigmakaizen.com · X: [@kaizen_6sigma](https://twitter.com/kaizen_6sigma)

Stay curious, stay improving,

David Rodgers

SixSigmaKaizen.com

References: Houthis Gain Further Control of Red Sea