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Why Reshoring U.S. Manufacturing Could Be Right for You



Global supply chain roadblocks and looming trade wars have American brands rethinking their manufacturing operations. Should you reshore manufacturing to the U.S.? Answer our five key issues to help shape your manufacturing strategy.



A 2022 COVID outbreak has cut China's manufacturing production. And Russia's war in the Ukraine is affecting the global supply chain.

The endless barrage of supply chain disruptions has many companies prioritizing supply availability over cost. To regain supply chain stability, American companies are looking closely at reshoring. The U.S. manufacturing ecosystem continues to evolve as companies reopen factories and the White House funds programs to fortify vital manufacturing segments.

The Latest Global Supply Chain Disruptions

China reported its lowest economic output since 2020 this past quarter because it shut down key manufacturing regions to address its latest COVID outbreak. And in addition to ongoing pandemic concerns, Russia's military aggression is having an impact far beyond the Ukrainian border

Sanctions designed to deter the Kremlin's advances come at a high cost for European countries that have leaned heavily on Russia to literally fuel their economies. Germany, for example, has relied on Russia for 40% of its coal and oil, and 55% of its natural gas.

To comply with Russian energy embargos, German manufacturers are bracing for a stark <u>reduction in fuel</u>. Executive strategies include doubling factory production while power is available, reevaluating which products to manufacture, and establishing contingency plans.

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of manufacturing executives and 78% of CEOs are considering reshoring or have already reshored some manufacturing operations to America.

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Companies that navigate these challenges – along with natural disasters and retaliatory tariffs – may still face transportation delays. Although backlogs at the Port of Los Angeles have abated, this West Coast port recorded its third busiest month ever this May.

Signs of U.S. Manufacturing Growth

U.S. factories employed 11.5 million in 2010 and this number grew modestly to 12.5 million by 2020, according to the <u>Manufacturing</u> Extension Partnership (MEP). A 2022 survey shows that U.S. manufacturing executives are on the precipice of significant reshoring efforts.

As part of its annual Reshoring Index, Kearney reports that 92% of manufacturing executives and 78% of CEOs are considering reshoring or have already reshored some manufacturing operations to America. Company executives are also near-shoring production to Mexico, and then driving components to the U.S. for assembly and sale.

U.S. Reshoring Benefits

Both the federal government and industry are making investments to support U.S. suppliers and manufacturing brands. And global economics are also compelling companies to consider manufacturing in America.

Increase Cash Flow: Procuring, manufacturing, and selling products in the same region can accelerate time to market by cutting transportation time and costs. This can also help U.S. manufacturers reduce the length of time their capital is tied up in material costs. Many companies have been hamstrung because they require semiconductors or other components to complete production.

Capitalize on Federal Incentives: The federal government continues to pledge investments for key manufacturing segments ranging from electric vehicle (EV) batteries to semiconductors. This funding supports direct and adjacent manufacturing industries. Ingersoll Rand, for example, is reactivating a New York plant to produce air compressors required for semiconductor and steel plants.



\$100m

USA Rare Earth announced plans for a \$100 million metal and manufacturing facility to process REEs in Oklahoma.

Increase Domestic Access to Rare Materials: Rare earth elements (REEs) are a critical component of mobile electronic devices, electric vehicles, and other products. China currently supplies more than 40% of REEs globally, and there's an increased focus on sourcing REEs in North America.

In June, USA Rare Earth announced plans for a \$100 million metal and manufacturing facility to <u>process REEs in Oklahoma</u>. The news reflects a renewed industry and state-level focus on REEs. And it complements the federal government's steps to safeguard "vital" supply chains.

Advanced research may also help to address this issue. In June, the U.S. Department of Energy announced a patented process to <u>extract rare earth</u> elements from natural brines.

5 Steps to Determine if U.S. Reshoring is the Right Move

How do you evaluate offshore vs. reshore decisions? Here are five considerations to help shape your manufacturing strategy.

1. Calibrate your Supply Chain for a Regional Focus: Stanley Black & Decker sources materials and parts close to its factories whenever possible. The company prioritizes tier-one and tier-two suppliers differently than a multinational brand that sources exclusively in China. As you shift to a regional focus, review how your current supply chain operations align with regional sourcing needs.

2. Audit Suppliers for Resiliency: This can include:

- Determine if there is a regional overreliance on suppliers and redistribute as necessary
- Address shipping and logistics roadblocks. (E.g., avert congested West Coast ports by procuring and manufacturing products in regions that can ship directly to ports with capacity)
- Identify new suppliers and evaluate alternative manufacturing methods
- Evaluate U.S. material availability compared to other regions and address any gaps. Companies with manufacturing processes are importing components and materials to the U.S. and then using automated manufacturing to accelerate production and control wage expenses



3. Benchmark Costs: Use <u>regional data libraries (RDLs)</u> to compare costs by geography. Manufacturing teams can compare U.S. costs to nearly 80 other regions. This includes labor, overhead, and tool shop rates. Teams apply this information to identify components to reshore. And they can prioritize which components to reshore based on the financial impact of each SKU produced in the U.S.

Teams also use manufacturing costing models to get precise cycle times and operational costs across a range of manufacturing alternatives. Sourcing teams use this background to conduct fact-based conversations with suppliers to streamline negotiations. (Learn more about the new features in <u>aPriori release 22.1</u>.)

- **4. Simulate Manufacturing:** To gauge production capacity, simulate production runs of a company's factories and partner manufacturing facilities in America or near-shore locations. Manufacturing teams can run a component through digital factories in different regions. With the <u>aPriori Digital Factory</u>, teams then review these results to compare factories and regions based on costs, capacity, and production speed.
- **5. Improve Sustainability:** Incorporate sustainability into your overarching design for manufacturing (DFM)/design for excellence (DFX) benchmarks and processes. This enables manufacturers to understand a product's CO₂ impact during early design phases, and then evaluate opportunities to reduce a product's carbon footprint.

Product development teams can also <u>simulate design alternatives</u> using alternative materials and manufacturing processes to meet CO₂ emissions, cost, and performance targets. Additionally, regional production will also help to reduce your transportation carbon footprint.

Should you Ride the Reshoring Wave to the U.S.?

Reshoring is part of a broader strategy to increase supply chain availability. This includes reconstructing far-flung global supply chains into regional operations that are closer to customers.

Companies that source materials and manufacture products regionally can insulate themselves from some global disruptions while also reducing delays, costs, and carbon emissions.

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aPriori is the leading provider of digital manufacturing simulation software that brings product design and sourcing teams closer to production. By leveraging the digital twin within our digital factories, we automatically generate design for manufacturability (DFM) and design for cost (DTC) insights, helping manufacturers collaborate across the product development process to make better design, sourcing and manufacturing decisions that yield higher value products in less time. aPriori solutions are now available either in the cloud or on-premise.









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