



In This Issue: New Lean Partner—Neptune | Update on Lean Concepts, Inc Public Workshops | Lean Leadership Series | Important Reshoring Initiative

LCI Welcomes Neptune Chemical Pump Co.

Lean Concepts, Inc has begun working with Neptune Chemical Pump Company, another Dover Corporation company and leading them on their Lean journey. Neptune is located in North Wales, PA and is a leading manufacturer of chemical metering pumps and accessories. Neptune Hydraulic Diaphragm metering pumps are typically used for chemical metering in process and agricultural industries. Like other companies we work with, Neptune recognizes how valuable and important having a Lean organization is in today's marketplace. At the end of the day, companies that survive in this global economy will have the vision and foresight that companies like Neptune have and will continue to have if they continuously improve and constantly look inward for improvements in efficiency and effectiveness that the tools of Lean can provide. Find out more about Neptune Chemical Pump Co. at 215-699-8700 or on the web at www.neptune1.com



Lean Concepts, Inc. Upcoming Public Workshop Schedule

Visit our Website www.lean-concepts.com for Pricing and Registration Information for Workshops

For Lean Certification Class, See [University of Akron-Medina County](#)

Inventory and Warehouse Management Workshops

Monday, May 16th 8am-4pm
Residence Inn-Cleveland Airport
17525 Rosbough Drive
Middleburgh Heights, OH 44130

Thursday, June 23rd 8am-4pm
Courtyard by Marriott
2777 Fairfield Common
Beavercreek (Dayton) Ohio 45431

Thursday, July 14th 8am-4pm
Residence Inn
1370 Arrowhead Drive
Maumee (Toledo) Ohio 43537

LEAN CERTIFICATION COURSE!!

Part I Tuesday, May 17th-Thursday, May 19th
8:30am-4:30pm

Part II Tuesday, June 14th-Thursday, June 16th
8:30am-4:30pm

University of Akron-Medina County University Center
6300 Technology Lane
Medina, OH 44256

As American manufacturing tries to recover from the “Great Recession”, one new initiative that Lean Concepts, Inc believes to be important is an initiative called “The Reshoring Initiative”. Read about this important concept and its founder below, then read further to see how it can impact a global company with some insight from our friend John Shook at the Lean Enterprise Institute.

The move to reshore production (also known as homeshoring, onshoring, backshoring, and repatriating) has grown increasingly popular in the U.S. over the last few years in the face of higher transportation and fuel costs, higher wage rates and reject rates in developing countries. Companies can reshore to:

- Reduce pipeline and surge inventory impacts on JIT operations;
- Improve the quality and consistency of inputs;
- Cluster manufacturing near R&D facilities, enhancing innovation;
- Reduce IP and regulatory compliance risk;
- And, most importantly to reduce Total Cost of Ownership (TCO).

All while staying cost competitive.

The Reshoring Initiative documents the benefits of sourcing in the United States. This is extremely important given that 60% of OEMs and manufacturers use "rudimentary total cost models" and ignore 20% of the costs of offshoring (according to a 2009 Archstone Consulting survey). If you are not accounting for 20% of YOUR costs to offshore -- offshoring may NOT be the most economical decision. And in times of a tough economy, no one can afford that.

In an attempt to truly understand the costs of offshoring compared to local sourcing, the Reshoring Initiative has developed a Total Cost of Ownership (TCO) Estimator. This software is free and it was designed to help OEMs and manufacturers compare the **TRUE Total Cost of Ownership**.

Job shops and US manufactures supplying OEMs can also use the software to make a case for local sourcing (or not). The key is to get the real story so that everyone can make the best economical decision in this tough economy.

Reshoring Initiative Founder Harry Moser has presented the benefits of reshoring at AME (Association for Manufacturing Excellence), AFS (American Foundry Society) and CSUSTL (Committee to Support U. S. Trade Laws) conferences and webinars sponsored by the FMA (Fabricators and Manufacturers Association) and AME/APQC.

Learn more at <http://www.reshoringmfg.com/>

Insight from John Shook

Henry Ford could get the customer any type of Model T as long as it was black. But the Ford Motor Company now finds itself in the strange position of being able to supply vehicles in any color except (metallic) black as a result of the catastrophe in Japan.

The earthquake-tsunami that hit northeast Japan has rocked global supply chains that will be changed forever. Who knew (I didn't) that so much of the world's production could be so devastated by disruption from a single region? Instead of simple knee-jerk responses, let us commit to leverage these events to initiate a new and total revolution in sourcing strategy. First, a quick look at how we got here.

What happened?

A trend that started in the auto industry in the 1990s and became a tsunami that has now hit the whole industrial world: a radical supply model that outsourced, offshored, and "single sourced" from a single supplier *often at a single plant* thought to be the cheapest location in the world. (And tooling costs were saved too by installing capacity at only one supplier location.)

Twenty years ago, [Inaki Lopez](#) at GM and then VW kicked off this revolution in automotive supply chains that quickly expanded to the whole industrial world. To be sure, a revolution was needed at that time. OEM-supplier relations in the auto industry were often too cozy and OEMs had so many suppliers they could barely identify them all. Lopez made the First Commandment of Sourcing: *Lowest Global Piece Price*. All previous considerations of how parts related to operations went out the window. Cozy buyer-seller relationships vanished - that's good - but sensible considerations such as total cost, quality, logistics, and partnering for mutual prosperity also disappeared.

Before long, even internal operations were held to the same pricing standards. "Outsourcing" grew along with "offshoring," under the edict, "Match the price I can get in China or your contract goes up for bid." And up for bid they did go, and out of business they went. First, smaller suppliers closed their doors, at huge cost to OEMs to replace the lost supply of parts and materials. They were followed by larger ones. Eventually all major automotive-dedicated suppliers based in the USA filed for bankruptcy.

As a result, supply chain logistics became increasingly complex. Other trends contributed: more sophisticated software and transportation systems, for example, led to the rise of "3PL" or third-party logistics specialists. Logistics and even supply chain strategy became outsourced. Outsourcing begat outsourcing. Not unlike the specter of machines designing machines (as in "the *Terminator*"), a monster was created. In the end, yet another key competence of manufacturers was lost to specialists whose interests were their own, not the OEM's. Not the customer's.

There is nothing inherently wrong with sourcing globally. But a single-minded focus on lowest piece-price with no regard to broader regional strategies leads to unneeded complexities. And, as we see from the catastrophe in northeast Japan, unneeded risk. Who knew (I didn't) that 40% of the auto industry's microchips were being produced in one relatively small region, most of them in one factory.

The simplistic and predictable reaction of some critics to question just-in-time is, of course, not the real issue here - supply chain strategy and configuration are. In fact, semiconductors weren't being produced via JIT anyway - large batches still hold sway in the electronic components industry. And yet as usual, the catastrophe in Japan has given rise to cries for the end of JIT. Minimal buffer stocks caused immediate production losses so surely the answer, according to critics, is more production and more stock. Increasing buffer stocks or finished goods inventory to buffer against a 100 year interruption is absurd (See: [Nonsense about JIT](#) by Jim Womack).

A car has thousands of discrete parts and doesn't become a car until it has each and every one of them. "Tuxedo Black" is Ford's name for a color dependent on a unique pigment from a Merck plant close to the Fukushima Daiichi nuclear plant. It isn't produced anywhere else. Merck says the plant wasn't damaged but, due to radiation, engineers won't be able to even reenter the plant for weeks and once they do it will take six to eight weeks to set things back to order and begin producing Zirallic, Merck's name for the pigment. In the meantime, Ford can still build a truck for you, just not one in Tuxedo Black.

The deeper problem is that most companies didn't know the full extent of their exposure to risk. Buyers know their suppliers, but usually not their suppliers' suppliers, or the suppliers of those suppliers. Toyota

has demonstrated remarkable ability to recover from supply disruptions in the past (See: [Aisin factory fire](#) in 1997). Honda too: when US tariffs disrupted their steel supply ten years ago, Honda airlifted carbon sheet steel from Japan to the U.S.

A New Model for Sourcing and Logistics – Regional and Rational

Similarly, the solution isn't just a matter of exiting northeast Japan, another knee-jerk reaction of some supply-chain companies. Rather, the solution lies in totally rethinking supply chains. In general, it makes most sense to produce close to where you sell. And in general it makes most sense to engineer close to where you produce. And it certainly makes most sense to procure as close as possible to where you produce for your customers. For most large firms, that means we need regional supply strategies.

So let's use the current crisis to signal an end to 20 years of madness in sourcing strategies. Single sourcing is dangerous. That much is obvious. And 100 sources all competing for the next contract based on piece price is also dangerous, in a different way. When that single source is continents away from production facilities, the danger is magnified.

A new sourcing model is needed. The wisdom of 'dual supplier' strategies of many lean thinking supply chain managers is clear - avoid both single source and "numerous source" situations. When Deming advocated what he called "single sourcing," he was promoting OEM-supplier relationships based on partnership, not zero-sum negotiation; and on cost of quality, not price of transaction. Toyota's traditional approach was to pursue dual sourcing for first and second tier suppliers (unfortunately this did not always extend to often small third-fourth tier suppliers - thus Toyota is especially suffering from the global supply crisis since 80% of their in-vehicle computer chips were being supplied by one facility in northeast Japan with no easy re-sourcing possible). With dual-sourcing, risk is avoided, such as when one supplier facility goes down, and competition is encouraged, with two suppliers in the game.

Anyone anywhere who wants to make their country a competitive manufacturing location needs to practice lean math. That's total cost -- including the potential cost of disruption on long-distance supply chains -- rather than the piece price plus slow freight cost calculation done by most manufacturing firms today. The USA, specifically, is already a much more "competitive" manufacturing location than most senior managers seem to think, based on the continuing decisions to send manufacturing to locations far and wide. For an example of a simple total cost model, from the Reshoring Initiative, go here: <http://www.reshoringmfg.com/> .

But, be careful. Any costing model will be based on assumptions, and while risk can be included, no risk model could account for the disruption that began on March 3, 2011. Rather than a cost model that we hope will spit out the perfect answer every time, it's more practical to work from some simple principles of lean supply chain configuration. Shorter lead times are better than long. Closer proximity between suppliers and customers is better - shipping regionally better than shipping across oceans. Less inventory with more frequent delivery is better than large inventories that move infrequently. Single sourcing, especially single location sourcing, is bad - it's risky and doesn't leverage natural, healthy competition tension. Maintaining hundreds of suppliers for the same part is also bad - it generates complexity, confusion, and costs of redundancy.

Also, the challenge of adopting a total cost view is more than resistance to the basic concept. Companies are inept at understanding true total costs, let alone how to make decisions accordingly. As costs are broken down and allocated across functional lines, ownership and even understanding become murky. That's where the lean math comes in. Matt Lovejoy is CEO of Acme Alliance, a casting machining company outside of Chicago. Acme has operations that produce the same goods in Illinois, Brazil, and China, so Acme knows the actual cost - not price but cost - of producing in each country. Buyers often approach Matt and Acme in Chicago with an edict to source products in China, for example, when it makes more sense - in every way - to produce closer to the OEM, closer to the customer. Matt has found that many Lopez-ized buyers who want to shift sourcing from Illinois to China fail to consider a plenitude of costs and consequences (consider and considerations are very close in the sentence). Metal can cost more (surprise) in China than the USA (see Shanghai Metal Index versus London Metal Exchange). Energy costs more in China than the USA. Same with high-quality equipment, which may be more costly in China than the USA (due to high import duties for European or Japanese machinery). And, since labor comprises a tiny portion of the cost of making most casting products, these items

alone are worth careful scrutiny. And then what about the time and cost of managers' time to visit global locations, along with the communication challenges of late night conference calls with difficulty understanding those on the other end of the phone? And here's a key point to consider: What reductions in total cost could be realized if the time, effort, and energy of sourcing across the planet were actually invested in the local supplier through kaizen?

The point here, to repeat for emphasis, is NOT that sourcing in China or Brazil is a bad idea. The emergence of China and Brazil as productive sources for the global production community is a positive phenomenon of historical importance. But, each sourcing decision needs to be made on its own merits.

Stop the Madness

Lean thinking brings things together, emphasizing the connectedness of all parts, organizationally and physically: suppliers that are close to OEM factories that are close to customers. It will be no easy task to unravel the unneeded complexity caused by 20 years of piece price optimization. We can start making progress in that task by going back to the basics of starting with the customer, defining value, and working backwards from there. Working together, we can create supply chains that flow value from raw material to customer with ever shortening lead times, profiting both OEMs and suppliers.

Just as JIT is not the practice to challenge here, neither is the practice of sourcing globally. And the problem is far greater than being unable to order your vehicle in Tuxedo Black. "You need a crisis," we like to say, to spark your transformation. Global supply chain managers should be happy - they have a crisis of epic proportions. The catastrophe in northeast Japan is tragic enough in its own right and needn't have been made more so by things within our control: convoluted, high-risk, high total-cost supply chains generated by the lunacy of a narrow focus on lowest global piece price. Now is the time to rethink and reconfigure supply chains so they are rational, regional, practical, low in total cost and risk and high in fostering quality - in short, lean supply chains.

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