



Why to Reshore and the Supply Chain Once You Do

To Offshore or Reshore?
How to Objectively Decide

SIOR
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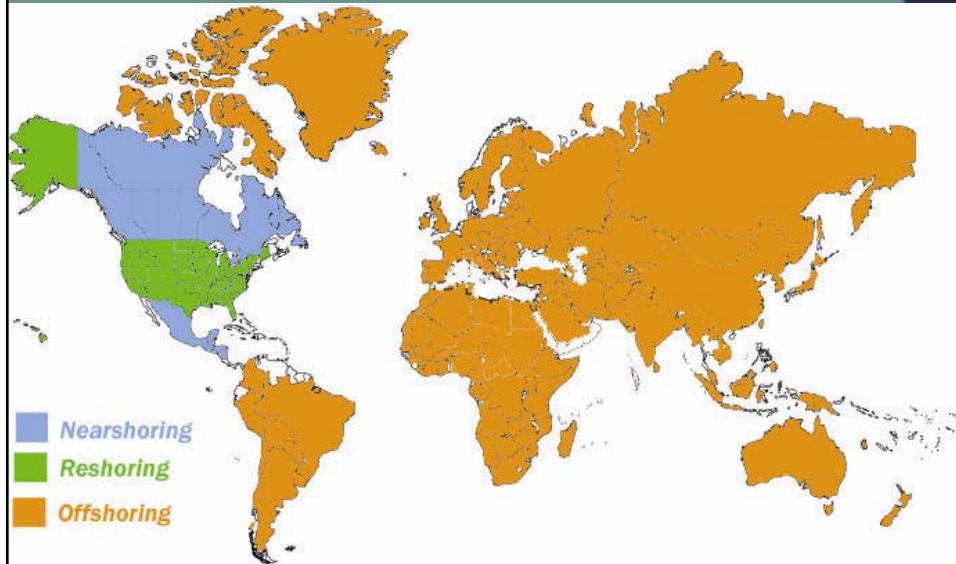
Agenda

● Overview	35 min
● TCO Estimator	5
● <u>Q&A</u>	<u>10</u>
● Total	50 min

Definitions

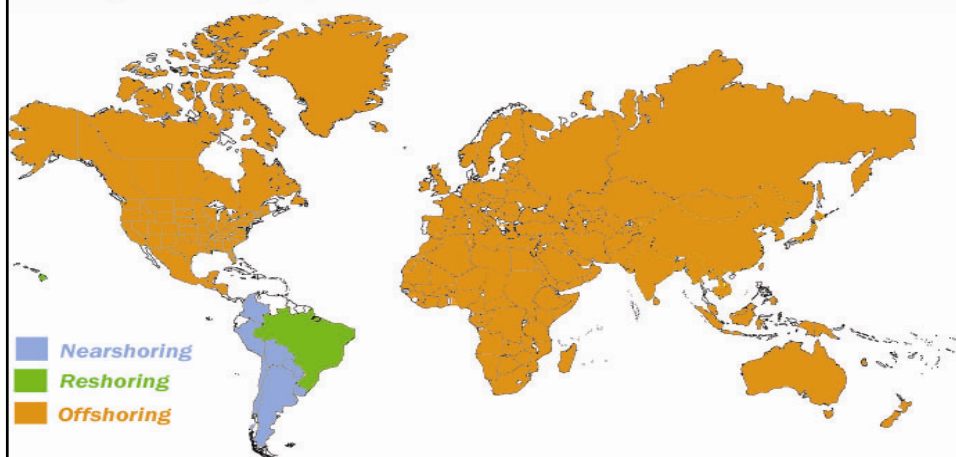
- Reshoring/Backshoring/Onshoring: Bringing back manufacture of products that will be sold or assembled here
- Outsourcing: Work done by another company, wherever located
- In-house: work done in the company's facilities, wherever located

Geographic sourcing alternatives



From a Brazilian perspective

Reshoring: a Brazilian perspective



Offshoring

- A major cause for U.S.:
 - Slow economic growth
 - Great Recession
 - U.S and state budget deficits
 - Unemployment
 - Weakened middle-class
 - Declining innovation
 - Shortage of skilled manufacturing workforce

Offshoring: partially herd behavior

- A 'herd' mentality to participate in the 'Chinese miracle' developed among global giant corporations -- {Peter Nolan; University of Cambridge; - 9/03
- "There is a herd mentality with OEMs in China — sometimes it makes sense, sometimes it doesn't—not always rational decision...
People tell their bosses what they want to hear— (going to China) gives a boost to the stock valuation, but you really have to do the analysis on a case by case basis." {Technology Forecasters 10/03

Source: Stone & Associates

Flawed company economic model

60% of manufacturers:

- Apply “rudimentary” total cost models
- Ignore 20% or more of the total cost of offshored products

Source: Archstone Consulting survey, American Machinist Mag., 7/16/09

“Manufacturing Is Expected to Return to America” “Renaissance in Manufacturing”

- “We expect net labor costs for manufacturing in China and the U.S. to converge by around 2015”
- “take a hard look at the total costs”
- Labor cost 20-30% of unit costs and will be only 30% below U.S. level. 10% savings exceeded by other offshoring costs.

Source: Boston Consulting Group press release 5/5/11

Reshoring Initiative's Objectives

- Accelerate the reshoring process
- Change the Sourcing Mindset:
 - From: "Offshored is Cheaper."
 - To: "Local Reduces the Total Cost of Ownership."
- Train:
 - OEMs: Why to source local.
 - Suppliers: How to "sell" local sourcing.
- Encourage production near the customer
- Do the best we can on the unlevel field now
 - Partial alternative to protectionism.

The Industry-Led Initiative Provides

- Free Total Cost of Ownership (TCO) Software for companies and suppliers/unions
- Online Library of 98 reshoring articles
- Media coverage of the trend: WSJ, USATODAY, IW, CBS, CNBC, etc.
- ~100 presentations/yr nationwide
- Regional Initiatives
- Motivation for skilled manufacturing careers
- Objective tools passionately promoted
- A solution to today's supply chain problems

Some major global supply chain problems

- Fragility:
 - Natural disasters: Japan, European volcano
 - Political instability
- Chinese and other LLCC:
 - Wages rising rapidly
 - Currencies poised to rise faster
- U.S. \$ declining
- Oil soaring

Typical sourcing decision matrix

Decision Criteria	Alternative Sources' Cost	
	Offshore	Local
Price	Low	High
Typical Decision	✓	

One reason price has dominated sourcing: complexity

Decision Criteria	Alternative Sources' Cost	
	Offshore	Local
Price	Low	High
Total risk	High	Low
Balance sheet	High	Low
Customer non-responsiveness	High	Low
Lack of innovation	High	Low
Typical decision	?	?

TCO Estimator benefits

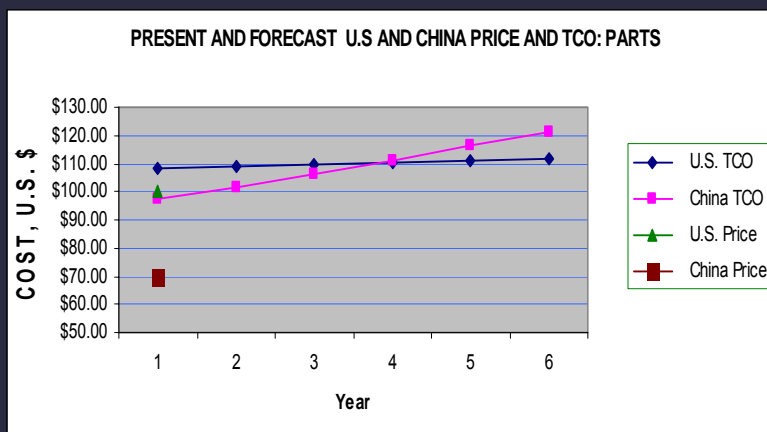
- Provides a single TCO for each source
- Flexible: values are 100% user selected.
- Broad:
 - 29 cost factors.
 - Via pull down menus you automatically insert:
 - Freight rates for 17 countries
 - Duty rates for parts or tools, e.g. molds
 - Current value and 5 year forecast of TCO.
- Easy to use:
 - Explanations and references to help select values.
 - Instruction Manual.
- Free

Example: some Assumptions: a Part

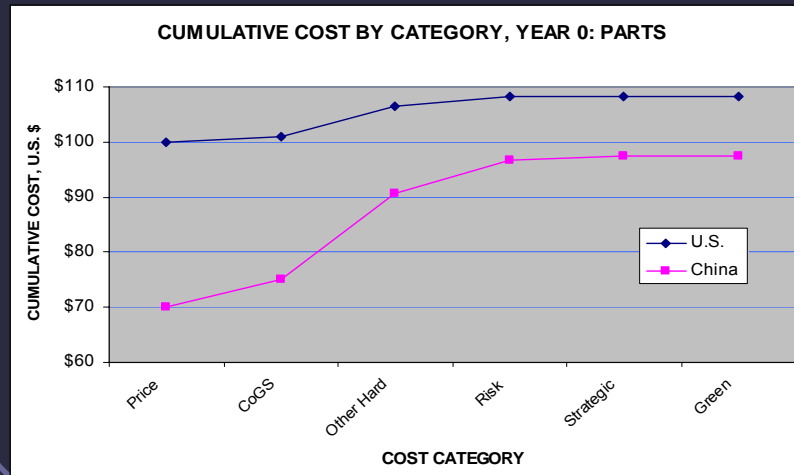
Chinese unit price	\$70	Product liability risk*	0.5%
U.S. unit price	\$100	IP risk*	1.9%
# units/year	12,000	Innovation*	0.5%
unit weight, lbs	2	Trips/yr	2
Shipments/year	6	Prototype cost*	\$5,000
product life, yrs	5	Country political instability risk*	0.4%
Packaging*	1%	Wage inflation, annual*	8%
Payment on shipment	Yes	Currency appreciation, annual*	5%
Quality*	2%		

* Chinese differential vs. U.S.

TCO Comparison Example: a Moderate Labor Content Part



Cumulative Cost by Category



GE water-heaters: an example

Bringing Production back from China:

- Water-heater production
- Unionized facility in Louisville, KY
- 400 jobs, renovated facility
- Reasons:
 - Tax incentives
 - High-tech new model
 - Ease of design collaboration with workers: cut cost \$20
 - 2 tier contract
 - Chinese cost: -30% becomes +6% considering inventory and delivery problems
- Will move a “significant piece” of appliance production back

Sleek Audio high-end earphones

- China to Manatee County, FL
- Reasons:
 - \$100Ks scrap
 - \$Ms lost sales
 - emergency air freight
 - costs up
 - communications: language and time
 - ~daily calls at 11 pm



ATMs

- Returned from China, India and Brazil to Columbus, GA
- 350,000 sq. ft. factory
- 900 employees
- Reasons:
 - Slow response from contract suppliers, esp. lower tiers
 - Chinese wages up
 - Eliminate silos by having mfg. near engineering and customers

Source: 1/27/10 Strategy-Business.com *Manufacturing: Backshoring on the rise*



Buttons

- China to Clarkesville, GA
- Reasons:
 - Salaries up
 - Expectations up
 - Rising Yuan
 - 20-25% of employees did not return from annual holiday



Glucose monitoring systems

- China to Charlotte, NC
- Hiring 20
- Reasons:
 - 5 month delays replacing defective products
 - Automation, 40% cost reduction
 - IP control
 - Inventory down from \$6.5M to \$1M

Source: *The case for back shoring* Joe Kolakowski 1/27/10



Circuit boards

- Woodridge, IL
- Supplies many AEM members
- Had quality issue with a Chinese component
- Found local IL source
- Result:
 - Quality problem fixed
 - Inventory cut by 94%



- 50% of Frisbees
- China back to CA and MI

Deming on Total Cost

- “End the practice of awarding business on the basis of price tag. Instead, minimize total cost.”

Source: “4th Key Principle for Management,”
Out of the Crisis, W. Edwards Deming

Offshoring multiplies Waste

<u>Toyota Wastes</u>	<u>Offshoring Contributes</u>
Overproduction	Large batch shipments, filling containers
Waiting	Uncertain delivery/Inconsistent quality, port, customs, shared “awake time” window for discussions
Transport	12,000 mi. inbound, 6,000 return (boat ½ full)
Overprocessing	More packing and unpacking, customs paperwork,
Inventory	In transit, cycle, safety stock, uncertain delivery and quality, less ability to see and count
Motion	Increased cost over time – repetitive motion injuries or additional labor to compensate
Defects	Much higher than local sources, extra inspection of materials and tolerances, customers unhappy longer

Offshoring impacts innovation

“an economy that lacks an infrastructure for advanced process engineering and manufacturing will lose its ability to innovate.”

Professors **Gary Pisano** and **Willy Shih**

Source: Restoring American Competitiveness, Harvard Business Review, July-August 2009

Benefits of globalization less clear

The impact of incremental unemployment and other benefit payments is approx. equal to the consumer price saving.

Source: The China Syndrome: Local Labor Market Effects of Import Competition in the United States. March 2011. David Autor, MIT and NBER, et al

Gaining support in DC

- Council on Competitiveness:
 - Working on Reshoring
- AFL-CIO:
 - National Reshoring webinar
- NIST MEP:
 - Webinar
 - Presentation at Annual Conference
- Cong. Wolf (R VA)
 - HR516: "Bring Jobs Back to America Act".
 - "Will call me to testify at a House hearing"
- SelectUSA

The fastest and most efficient way to strengthen the U.S. economy

- Reshoring breaks out of:
 - The economic zero-sum-game of tax/borrow and spend.
 - The increases in consumer prices of relying solely on currency changes.
 - The waiting-for-policy-decisions problem.
- Assures that the pie grows, to the advantage of all Americans.
- Grows the pie by taking back what we earlier lost.
- Focuses on the manufacturing sector which has suffered so many job losses for decades.
- More efficient than exporting, stimulus programs or tax reductions.

Potential benefits

- Eliminate trade deficit ~ \$600B/year
- 3M manufacturing jobs
- 8M total jobs ► 4% unemployment
- Budget deficit impacts: more than is likely from debt limit plan

How to participate: mfg. companies

- Use the TCO Estimator. Free.
- Buy and sell thinking TCO
- Call on me to train and help your supply chain, sales teams and customers.
- Submit reshoring cases, esp. after using the Estimator
- Use our template email to involve customers
- Sponsor

Coverage by real estate and logistics media

- *Trade and Industry Development*, 9/22/10 & Jan 2011
- *Site Selection*, March 2011
- *Material Handling and Logistics*, **June 2011**

What you can do

- Inform your manufacturing companies
- Use the tools to help convince prospect companies to have domestic factories
- Pass on to economic development agencies
- **Encourage them all to attend free industry-sponsored reshoring webinars: 11/17, 12/13, 5/9/12**

A non-profit with 21 sponsors, including

Platinum



Gold



Silver



A non-profit with 21 sponsors, including

Bronze



Steel



Iron



Other



Obtain information, improve profitability and help slow the offshoring flood now!

Contact:
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Initiative: www.reshorennow.org

Competing with/avoiding low labor cost competitors:
<http://us.gfac.com/company/careers/swot.cfm>