


Reshoring Initiative

Bringing Manufacturing Back Home

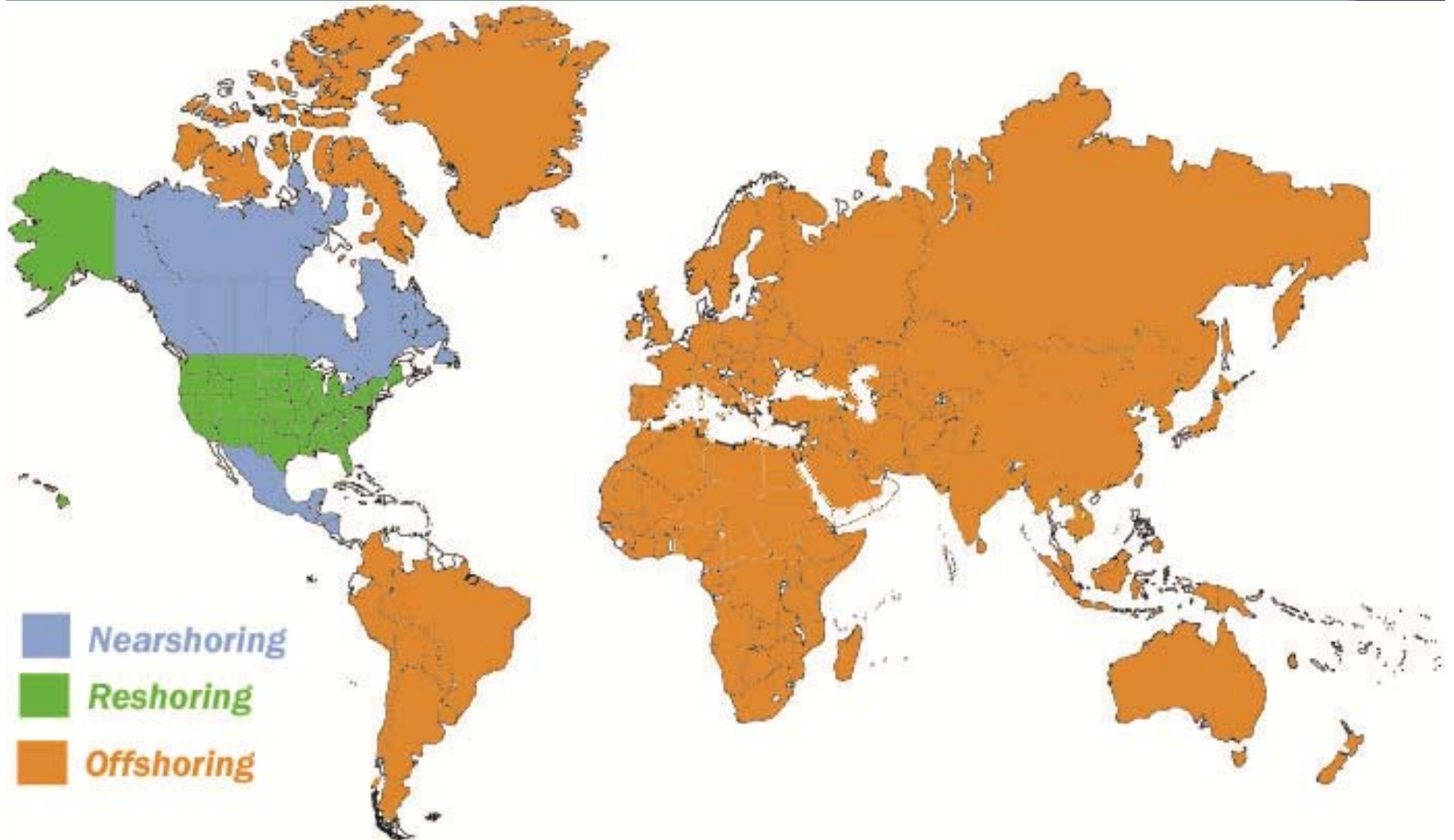
Total Cost of Ownership Calculation: 2012 update

To Offshore or Reshore?
How to Objectively Decide

DFMA
6/12/12

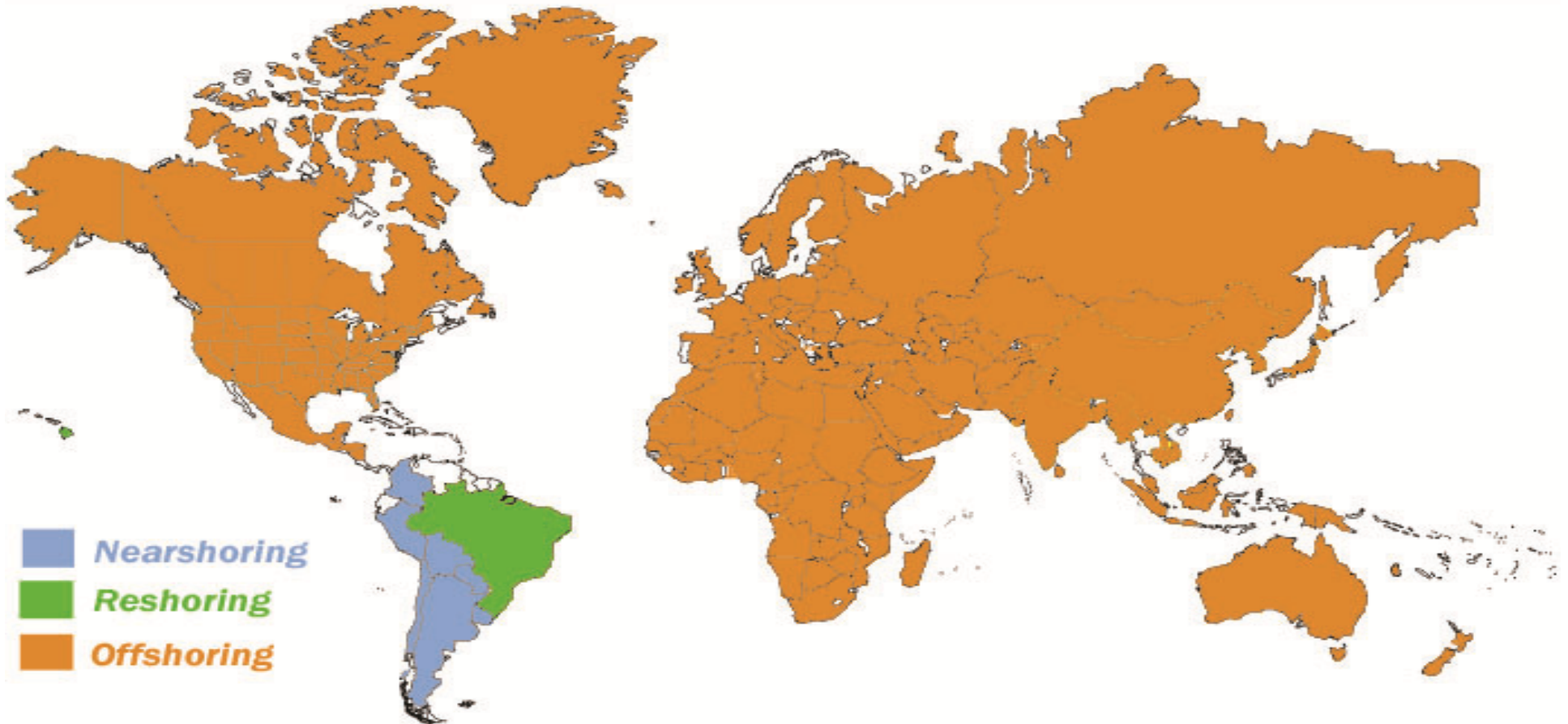
Harry Moser
President
Reshoring Initiative

Geographic sourcing alternatives



The concept works in other countries, also

Reshoring: a Brazilian perspective



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”

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

Chinese no longer “just thankful not to go hungry”

Source: Michelle D. Loyalka, 2/17/12 NYT

The Industry-Led Initiative Provides

- Free Total Cost of Ownership (TCO) Software for companies and suppliers/unions
- Online Library of 276 reshoring articles
- Case Study template for posting cases
- Media coverage of the trend: WSJ, USATODAY, IW, CBS, CNBC, etc.
- ~100 presentations/yr nationwide
- Motivation for skilled manufacturing careers
- Objective tools passionately promoted
- A solution to today's supply chain problems

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

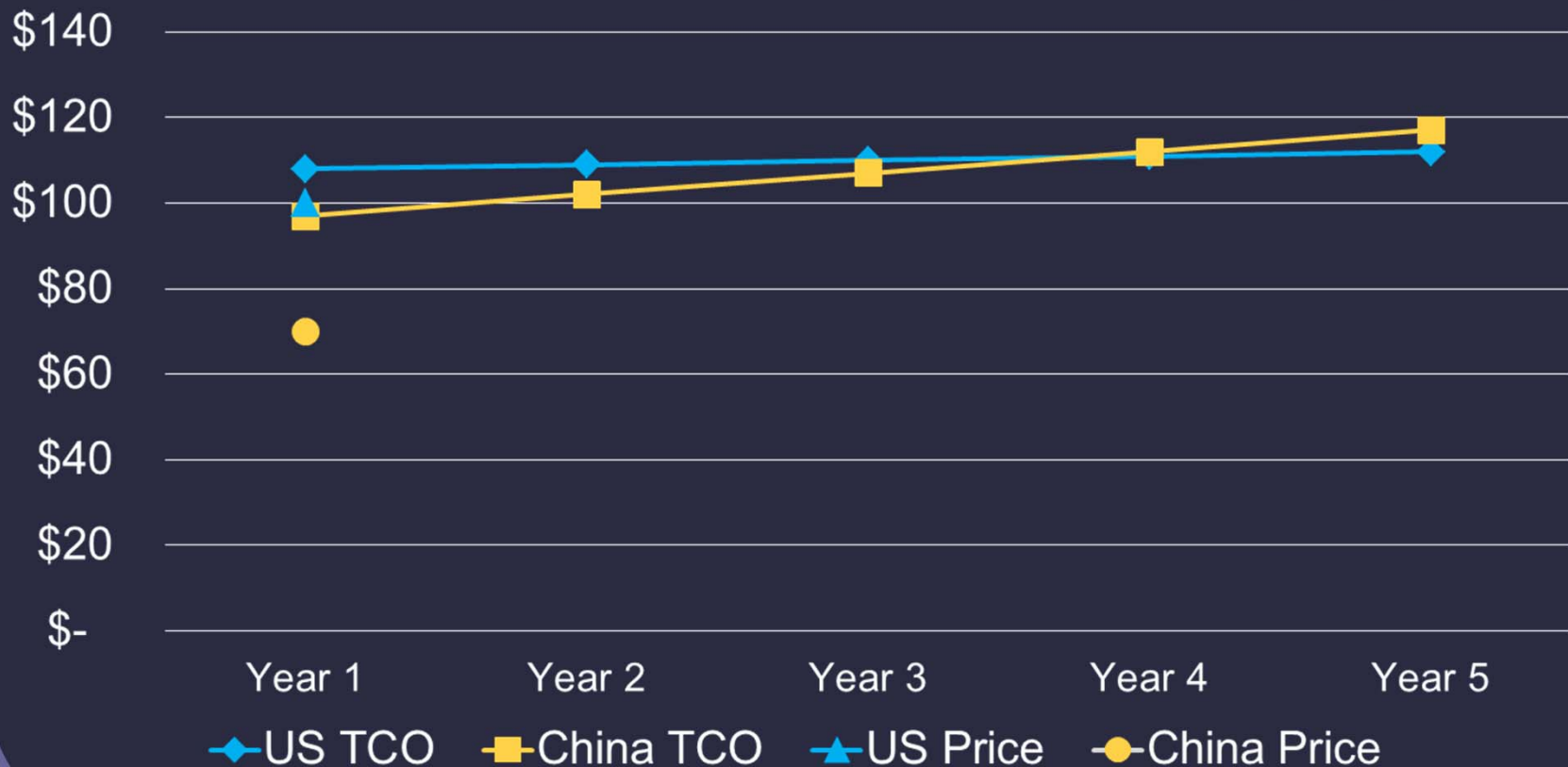
Chinese unit price	\$70
U.S. unit price	\$100
# units/year	12,000
unit weight, lbs	2
Shipments/year	6
product life, yrs	5
Packaging*	1%
Payment on shipment	Yes
Quality*	2%

Product liability risk*	0.5%
IP risk*	1.9%
Innovation*	0.5%
Trips/yr	2
Carrying cost, rate	22%
Emergency air freight %*	5%
Wage inflation, annual*	8%
Currency appreciation, annual*	5%

* Chinese differential vs. U.S.

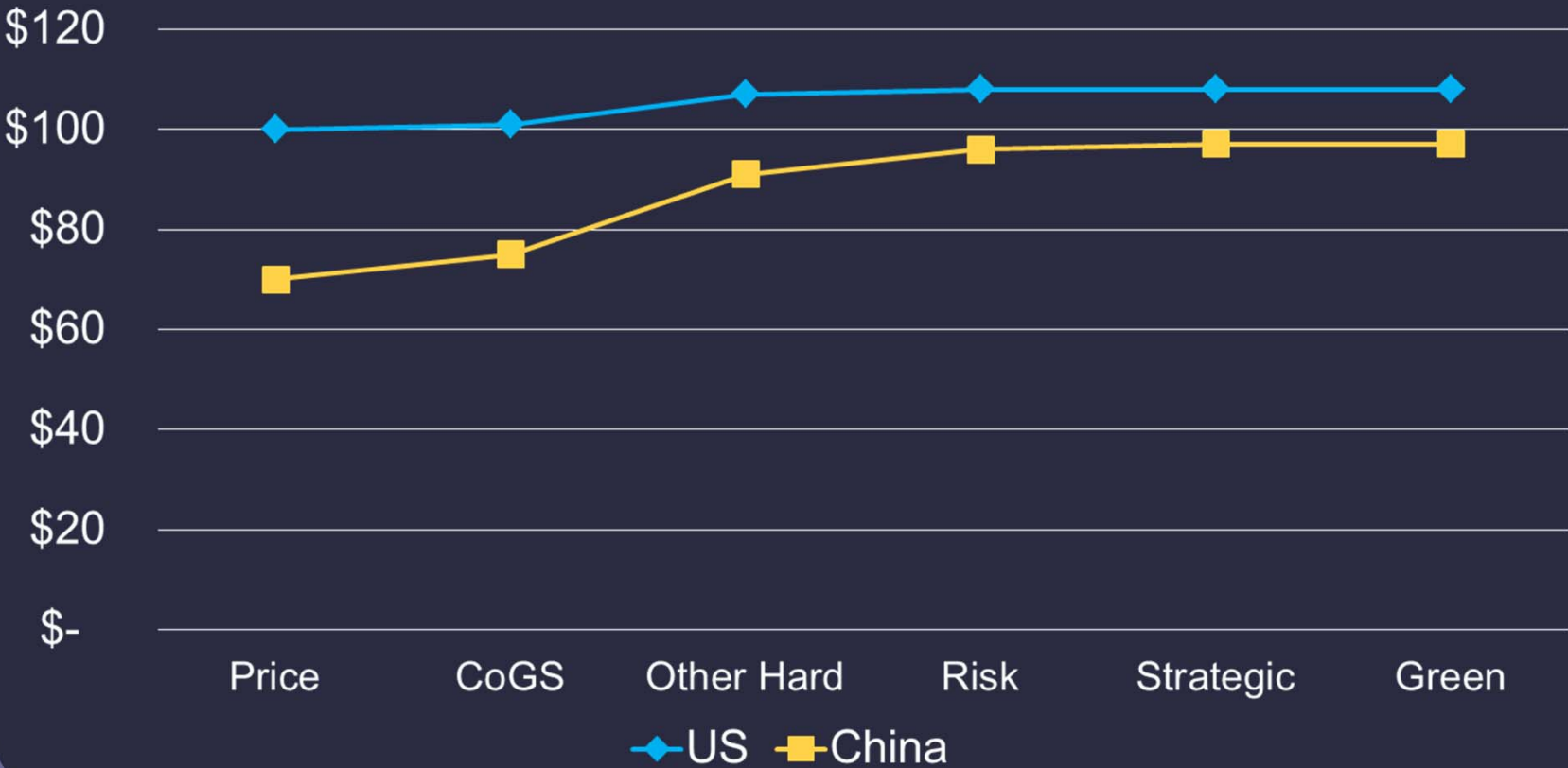
TCO Comparison Example: a Moderate Labor Content Part

Present and Forecast US and China Price and TCO (US\$)



Cumulative Cost by Category

Year 1 Cumulative Costs by Category (US\$)



Statistics from TCO data base: 7 cases China vs. U.S.

Very preliminary observations:

- Based on price: U.S. averages 142% higher, including 1 tie (15%).
- Based on TCO: U.S. averages 23% higher
- For 40% of the cases: US TCO is lower than Chinese TCO, averaging 37% lower
- Up to 25% of offshoring might return if TCO is used instead of price!

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

Impact on Product Strategy

- Impact of batch size and distance:
 - Offshoring → commoditization
 - Reshoring → differentiation/mass customization

Reshoring enables innovation

- Benefits of using TCO:
 - Recognize offshoring's impact on innovation
 - Understand you do not have to give up local manufacturing to achieve cost targets
 - Easier to justify process development/automation of local production vs. offshoring
 - Good tie-in with DFMA
 - Keeping mfg. local helps keep engineering local

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

TCO a complement to DFMA

- TCO makes the cost target transparent and achievable
- DFMA closes the cost gap
- One helps enable the other

Stated reasons for reshoring

REASON	# OF CASES
Wage/currency changes	88
Quality/rework/warranty	69
Delivery	60
Travel cost/time	54
Freight cost	53
Inventory	46
Emergency air freight	46
Total cost	40
IP risk	37
Communications	29
Customer responsiveness	17
Image/brand/U.S. preference	14
Price	10
Product Liability	6
Burden on staff	5
Natural disaster, political instability, innovation, regulatory, personnel risk*	0

Source: Reshoring Library article search 4/21/12 * = not explicit in TCO

Survey results re reshoring

- 61% of larger companies surveyed “are considering bringing manufacturing back to the U.S.” (MIT forum for Supply Chain Innovation 1Q12)
- 60% of contract manufacturers have done reshoring work this year (MFG.com 4/12)

Some reshoppers

CATERPILLAR[®]



Karen Kane





Water-heaters

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



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*

Gaining support in DC

- Commerce Dept:
 - 2012 budget specifies TCO.
 - Link now @ manufacturing.gov. Linked page this fall.
 - SelectUSA
 - Testified at CJS Congressional hearing on 3/28/12
- SBA
- Calls from:
 - United States-China Economic and Security Review Commission
 - White House National Economic Council

1/11/12 Insourcing Forum



1/11/12 Insourcing Panel



Suggested priorities re reshoring

1. Keep existing domestic sources
2. Shift outsourcing back
3. Repurpose offshore own-facility to serve the offshore market.
Incrementally invest domestically to serve domestic market
4. Shut offshore own facility. Build new domestic facility.

What can you do?

- Use the tools. Free at www.reshorennow.org
 - Use our archived webinars to inform staff and customers
 - Work with groups that are being trained on TCO:
 - Economic development agencies/Select USA
 - SBA
 - MEPs (part of Commerce)
 - Post a link like <http://www.pres-flex.com/american-made/>
 - Call on me to speak at: open houses, webinars, sales and supply chain training sessions
 - Submit cases of reshoring for publication and posting using our template.
www.reshorennow.org/casestudies
<http://www.reshorennow.org/resources/cases/casestudy.cfm?cid=5>
- IMTS
will post cases.
- Sponsor

A non-profit with 39 sponsors, including

Platinum



Gold



Silver



A non-profit with 39 sponsors

Bronze



Steel



Iron



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

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www.reshorenow.org



Recruiting trainees for the skilled manufacturing workforce:

<http://tinyurl.com/33vpz9k>