

AME/APQC Benchmarking CoP Virtual Networking Event July 17, 2012

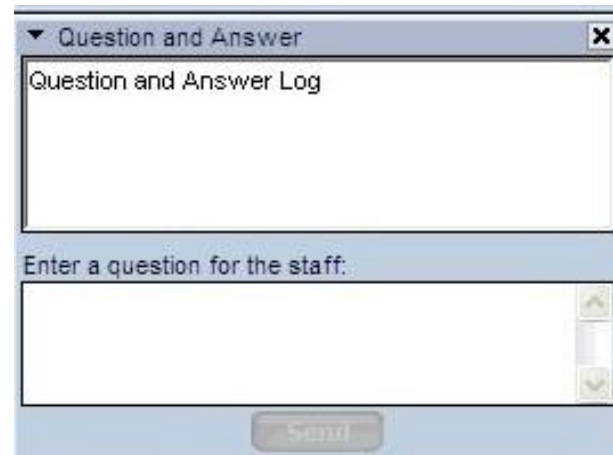
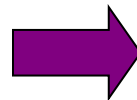
Best Practices in Deciding to Offshore or Reshore Manufacturing

Harry Moser – Founder, Reshoring Initiative



Housekeeping

- All lines are muted.
- You can submit questions/comments at any time. We will address all questions during the Q&A session at the end of today's presentation.



- Links to the recording and slides will be made available to all attendees via e-mail.
- Follow-up survey to provide more feedback.

Session Agenda

10:00 a.m. Welcome/Housekeeping

10:05 CoP Business

10:10 Benchmarking Presentation

10:45 Open Q&A

11:00 Adjourn

2012 Benchmarking CoP Calendar

Month	Session	Presenter
February	Trends in Reinvesting in US Manufacturing 2010 (replay)	Harry Moser
March	Latest Best Practices in Supplier Category Management	KPMG/APQC
April (1)	Sustaining Process Improvement	Mick Wilz
April (2)	Role of KM in Growing US Manufacturing (Face-to-Face)	Various
May	Daman Products Company, Inc.'s Continuous Improvement Journey	Larry Davis
June	Report out: April In-person Session on Growing Manufacturing	CoP Members
July	Deciding to Offshore or Reshore Manufacturing	Harry Moser

Send your topic or presenter recommendations via the Q&A tab or email at rwebb@apqc.org.

AME Events (www.ame.org)

- 07/17 Decatur (Tanner), Alabama
 - Toyota Kata Seminar
- 07/17 - 07/19 Decatur & Athens, Alabama
 - Toyota Kata Seminar & Steelcase Workshop
- 07/19 North Haven, Connecticut
 - Your Visual Business
- 07/24 Loma Linda, California
 - A3 Thinking - A3 Development
- 07/25 - 07/26 Milwaukie, Oregon
 - PDCA: The Core of Sustained Improvement Efforts
- 07/26
 - Lean Office & Service Simplified
- 08/07 Shoreview, Minnesota
 - Roadmap for a Lean Office
- 08/13
 - Building the Lean Fulfillment Stream
- 08/14 - 08/15 Redmond, Washington
 - Advanced Visual Management
- 08/15 Spencer, Massachusetts
 - Networking Round Table Performance Based Training
- 08/16 Newport News, Virginia
 - Developing Highly Engaged Workforce

APQC Events

➤ Webinars

- Tuesday, July 24

- Financial Management Community of Practice

➤ Benchmarking

- Effective Project Management Offices upcoming

- Extending the Reach of Supplier Quality upcoming

- Overcoming Organizational Resistance upcoming

- Open Innovation

- More Information

- <http://www.apqc.org/best-practice-studies>

Benchmarking Presentation Deciding to Offshore or Reshore Manufacturing

Harry Moser – Founder, Reshoring Initiative

All lines are muted. Please send your questions via chat to the Organizer.
We'll cover them at the end of this session.



We WILL send out a link to the recording of the event in the coming days.



Reshoring Initiative

Bringing Manufacturing Back Home

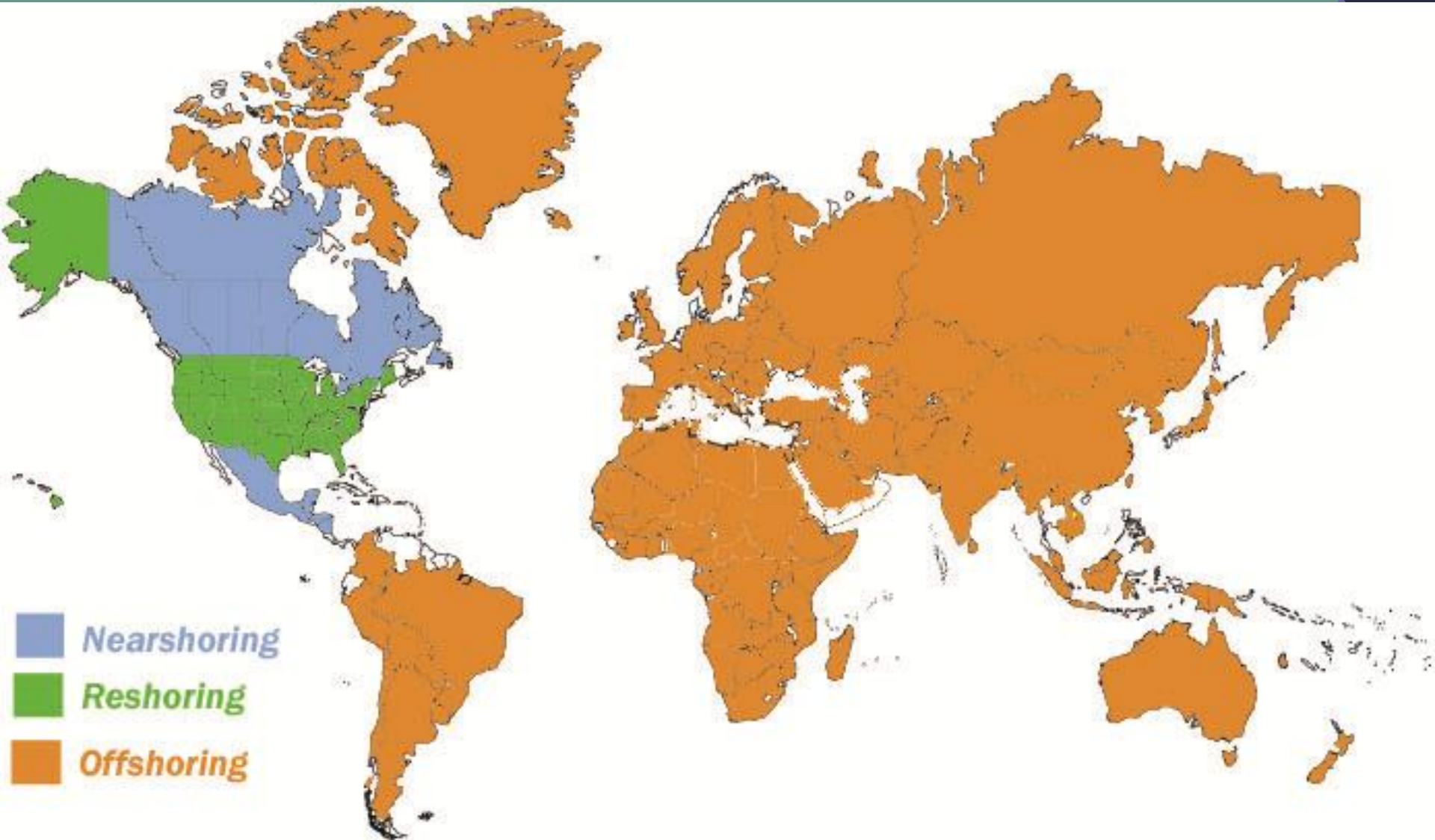
Looking at Total Cost of Ownership

To Offshore or Reshore?
How to Objectively Decide

AME/APQC
Benchmarking CoP
7/17/12

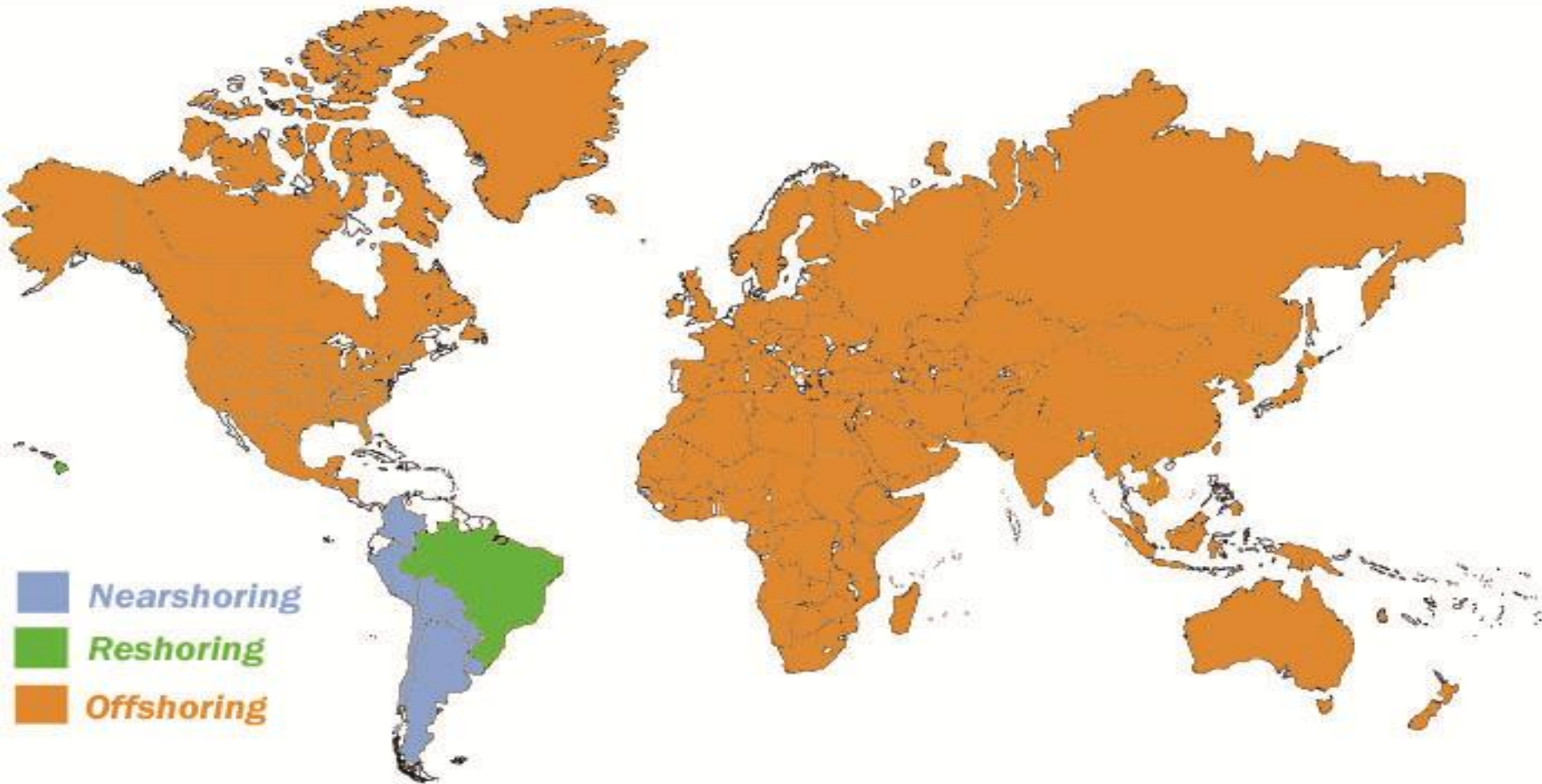
Harry Moser
President
Reshoring Initiative

Geographic sourcing alternatives



The concept also works in other countries

Reshoring: a Brazilian perspective



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”

Source: Boston Consulting Group press release 5/11 & 4/12

Chinese no longer “just thankful not to go hungry”

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

Survey says: reshoring is happening!

- 61% of larger companies surveyed “are considering bringing manufacturing back to the U.S.” (MIT forum for Supply Chain Innovation 1Q12)
- 40% of contract manufacturers have done reshoring work this year (MFG.com 4/12)

Reshoring is measurable!

- We calculate:
 - About 50,000 manufacturing jobs*
 - ~ 100,000 total, including multiplier effect
 - ~ 10% of manufacturing job growth since the low of Jan. 2010

* Source: 14,870 at 35 companies mentioned in published articles. Conservatively adjusted for 151 reshoring companies mentioned w/o hiring data and for outsourcing underreported.

The Industry-Led Initiative Provides

- Free Total Cost of Ownership (TCO) Software for companies and suppliers/unions
- Online Library of 284 reshoring articles
- Case Study template for posting cases
- Media coverage of the trend: WSJ, USATODAY, IW, CBS, CNBC, Fox Business, etc.
- ~100 presentations/yr nationwide
- Motivation for skilled manufacturing careers
- A solution to today's supply chain problems

Some major global supply chain problems

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

One reason price has dominated sourcing decisions: 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

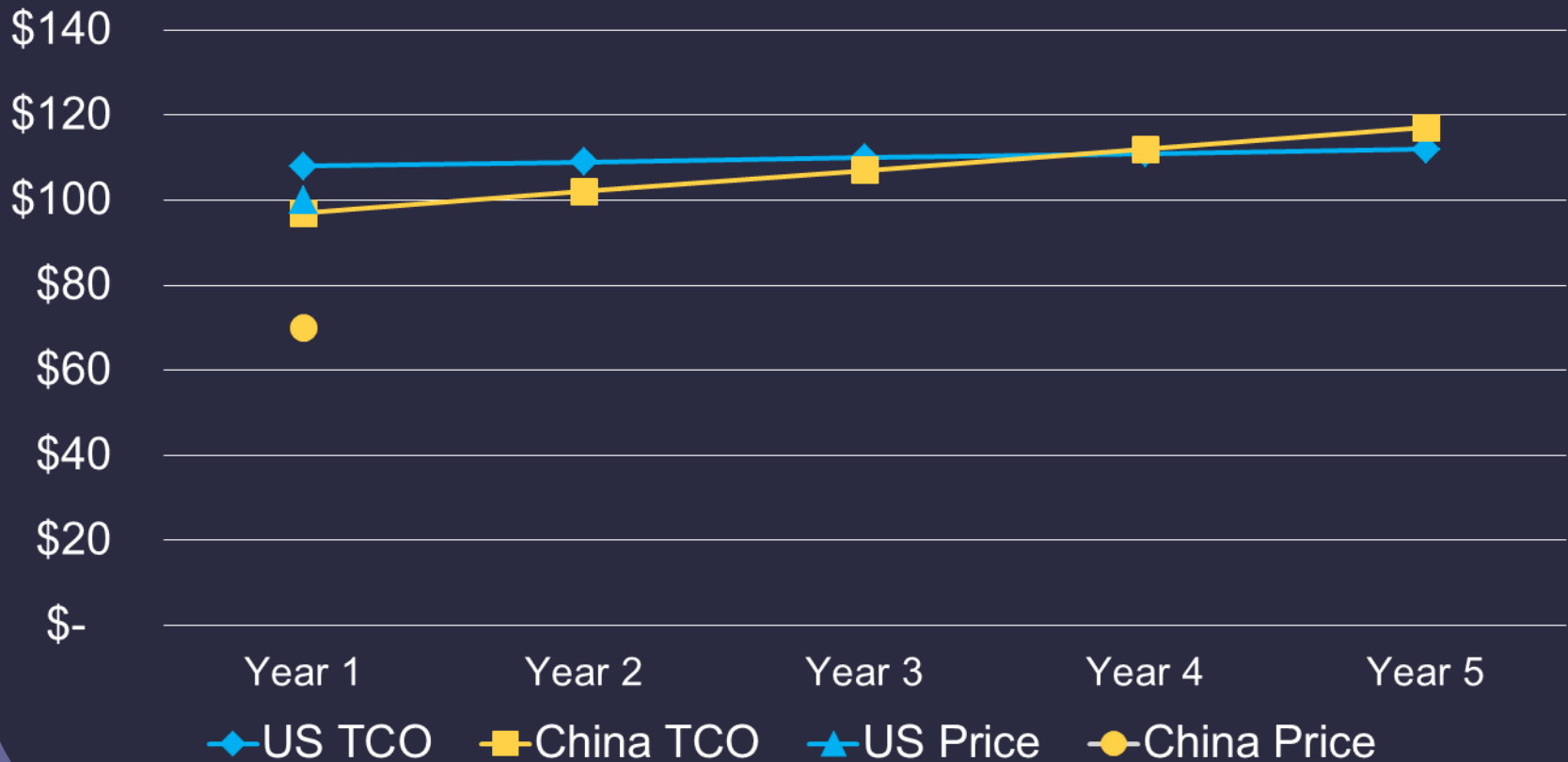
Chinese unit price	\$70
U.S. unit price	\$100
# units/year	12,000
unit weight, lbs	2
Shipments/year	6
product life, yrs	5
Packaging*	1%
Payment on shipment	Yes
Quality*	2%

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.

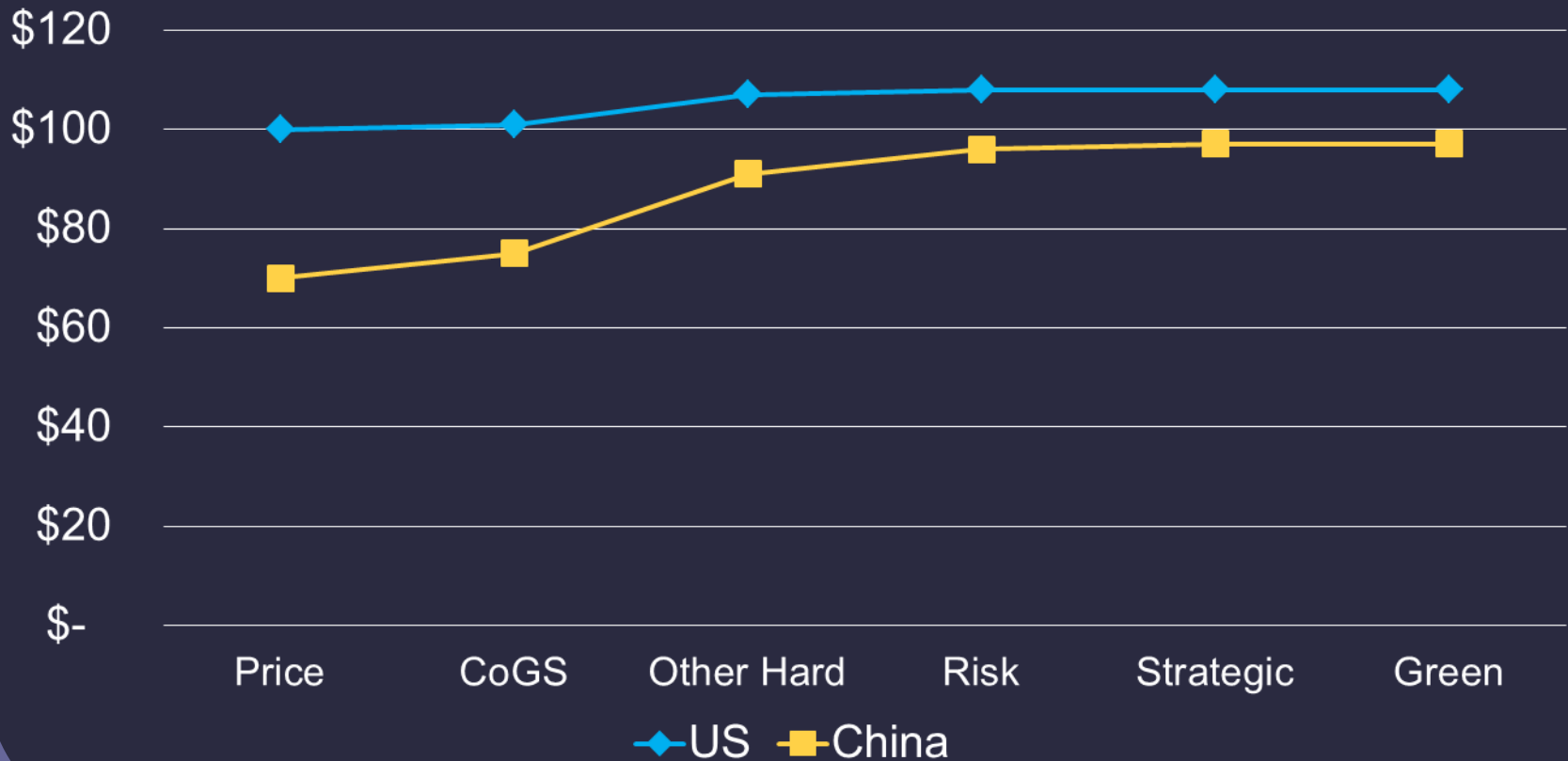
TCO Comparison Example: a Moderate Labor Content Part

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



Cumulative Cost by Category

Year 1 Cumulative Costs by Category (US\$)



Statistics from TCO database: 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!





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

Bailey Hydropower Hydraulic cylinders

- Had 100,000 ft² in Chennai, India
- Reshored to Westknoxville, TN
- 60,000 sq. ft.
- Reasons:
 - Fast delivery vs. 5 wks on the water
 - Fewer supply chain problems
 - If a quality problem, no more bad units en-route

Source: Knoxvillebiz.com Ed Marcum 8/7/10

- China to York, PA
- 165,000-square-foot plant built in York
- Reasons:
 - “FDA compliance is the main reason we’re here.”

Source: Bloomberg Businessweek, Small U.S. Manufacturers Give Up on 'Made in China' By David Rocks and Nick Leiber on June 21, 2012



PiG+RONiX™
FUTURISTIC ANALOG TECHNOLOGY

guitar pedals

- China to Port Jefferson, NY
- Reasons:
 - Couldn't adequately monitor quality at Chinese factories
 - Producing locally improves cash flow
 - Carrying costs in China were too big

Source: Bloomberg Businessweek, Small U.S. Manufacturers Give Up on 'Made in China' By David Rocks and Nick Leiber on June 21, 2012



OH and MI

- Hybrid transmission component from Japan
- Battery pack assembly from Mexico
- Steel forging from India
- Reason: be sure quality standards are followed

Source: Deseret News 8/4/10 *Ford says UAW deals bring work back to its plants*

Farouk Systems appliances

- Reshored from China to Houston, TX
- Hiring 1200
- Reasons:
 - Increased control over manufacturing inventory and distribution
 - Better quality and better image
 - Spent too much money fighting counterfeits
 - Texas supplier of plastic parts initially charged four times the cost of the Chinese supplier, but cut the price to near parity once it became clear that orders would be large and steady

Source: Coming Home: Appliance Maker Drops China to Produce in Texas, Timothy Aepfel, WSJ 8/24/2009

- China to Kewaskum, WI
- Reasons:
 - Gained efficiency through lean manufacturing
 - Product delivery time shorter
 - Inventory turnover faster

Source: **Bringing work back to America**

By Don Loepp on September 24, 2008

- China to Los Angeles, CA
- Reasons:
 - Quality control
 - Rising labor and duty costs
 - nimble companies are better able to capitalize on a trend
 - more sophisticated manufacturing techniques means U.S. production is no longer prohibitively expensive



Welded assemblies for aerospace and energy

- From Hungary and China to Torrance, CA
- Added 80 jobs in the US and looking to hire more
- Reasons
 - Quality control issues overseas
 - Customers willing to pay more for high precision quality



production of Nexus Q

- China to a manufacturer near Mountain View, California
- Reasons
 - "We wanted to see if we could do fast (design iterations) rather than having our engineers fly across the world."
 - Because Nexus Q will be sold in limited quantities, finding the cheapest possible manufacturer is less important.

Source: Reuters: Google sees advantage in making new gadget in U.S. By Noel Randewich and Alexei Oreskovic, July 3, 2012



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

Potential for reshored jobs is huge!

Consideration	Manufacturing Jobs*	Total Jobs*
Today: If all companies used TCO	~500,000	1,000,000
By 2015: If Chinese wage trends continue	1,000,000	2,000,000
Better U.S. training, process improvement , automation, tax rates	2,000,000	4,000,000
End of offshore currency manipulation	3,000,000	6,000,000

* # of jobs is cumulative. "Total jobs" assumes a low 1.0 multiplier effect

Gaining support in DC

- Commerce Dept:
 - 2012 budget specifies TCO.
 - Links now:
 - www.manufacturing.gov
 - <http://nist.gov/mep/reshoring.cfm>
 - 3 rounds of MEP webinars
 - Major link on SelectUSA this fall
 - 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 Panel



Selling using TCO

- Focus on profit impact, risk management, strategic benefits
- Overcome mandates
- Many Supply Chain Managers believe
- Work with natural allies:
 - Lean, Green, compliance, quality, line management
- Match “Chinese” price or TCO?

What can companies 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. IMTS will post cases.
- Sponsor

AME and reshoring

- Reshoring is one of 3 strategic thrusts:
 - Relentless process improvement
 - Better trained workforce
 - Reshoring/TCO
- Seeking reshoring cases for AME 2013 Ontario

APQC and reshoring

- Planning a high-level reshoring survey

Special Relevance to Quality, Competitiveness and workforce

- By understanding the small TCO gap instead of the large price gap:
 - You can justify domestic process improvement, automation, training, etc.
 - You do not have to sacrifice quality to seek offshore price.
- Recruiting is enhanced as reshoring becomes more visible

A non-profit with 40 sponsors, including

Platinum



Gold



Silver



A non-profit with 40 sponsors

Bronze



Steel



Iron



A leading partner and sponsor!



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

Contact:

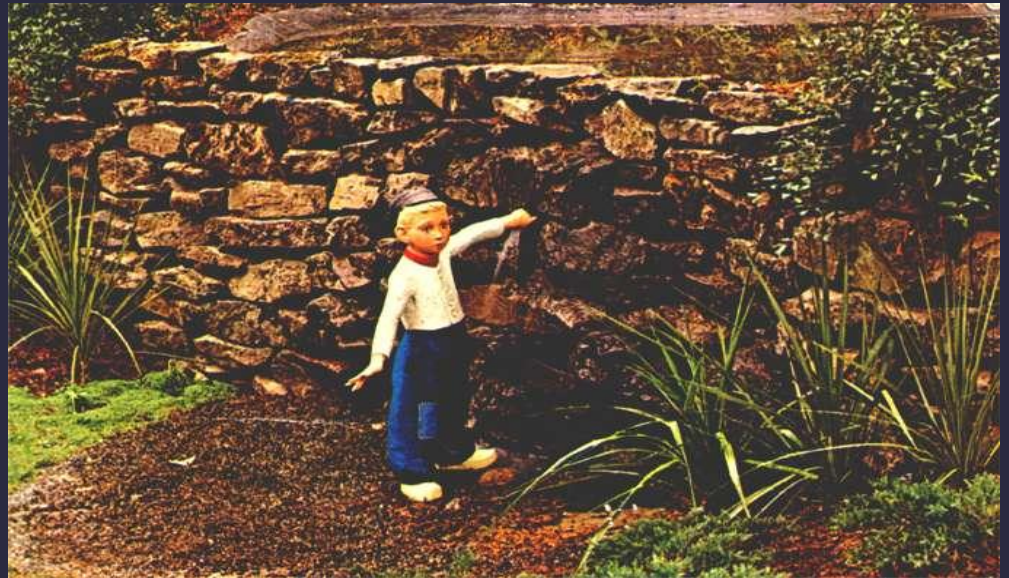
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Recruiting trainees for the skilled manufacturing workforce:

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