



Reshoring Initiative®

Bringing Manufacturing Back Home

To Offshore or Reshore? How to Objectively Decide

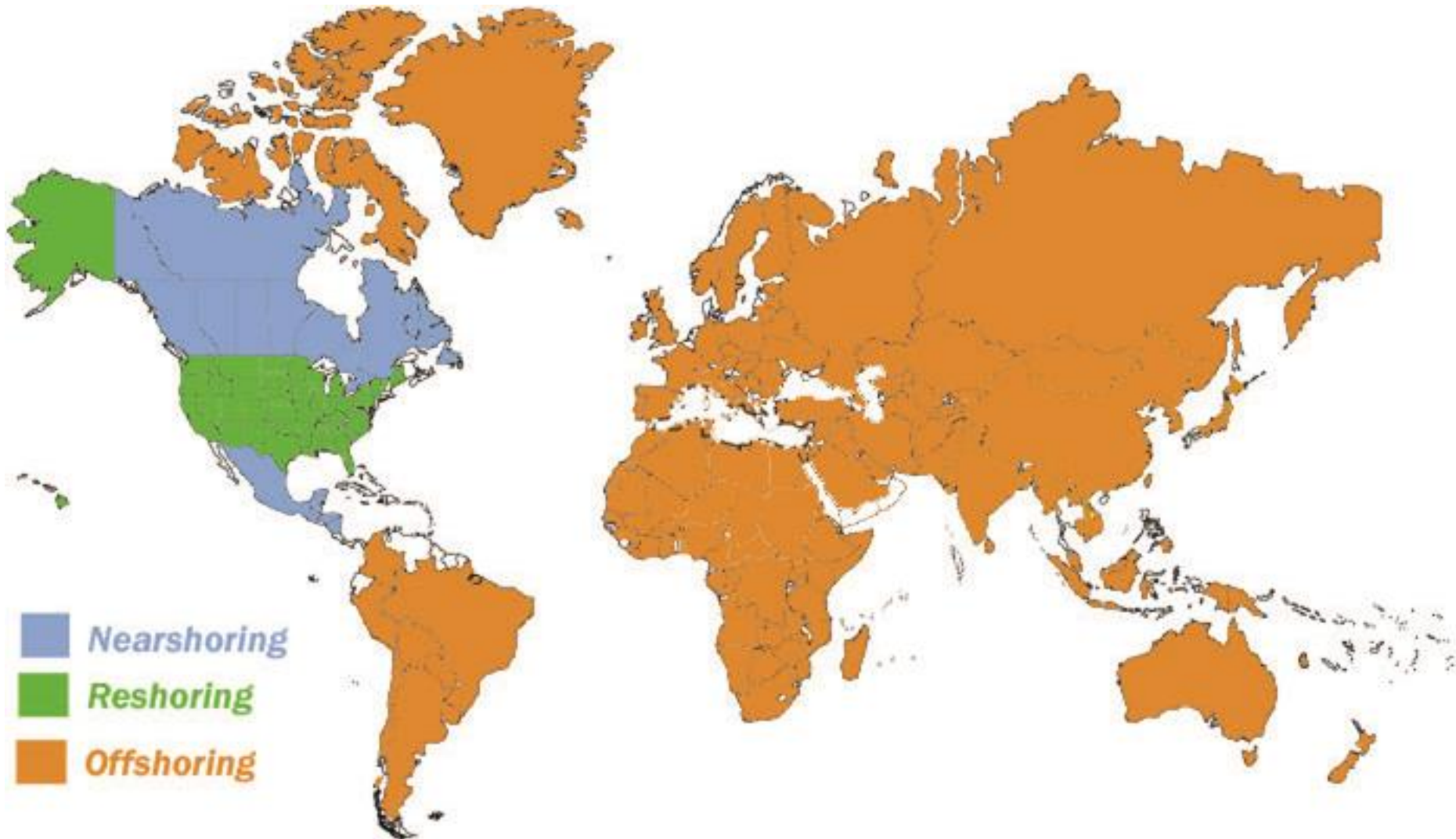
DFMA June 4, 2014

Harry Moser

Founder & President

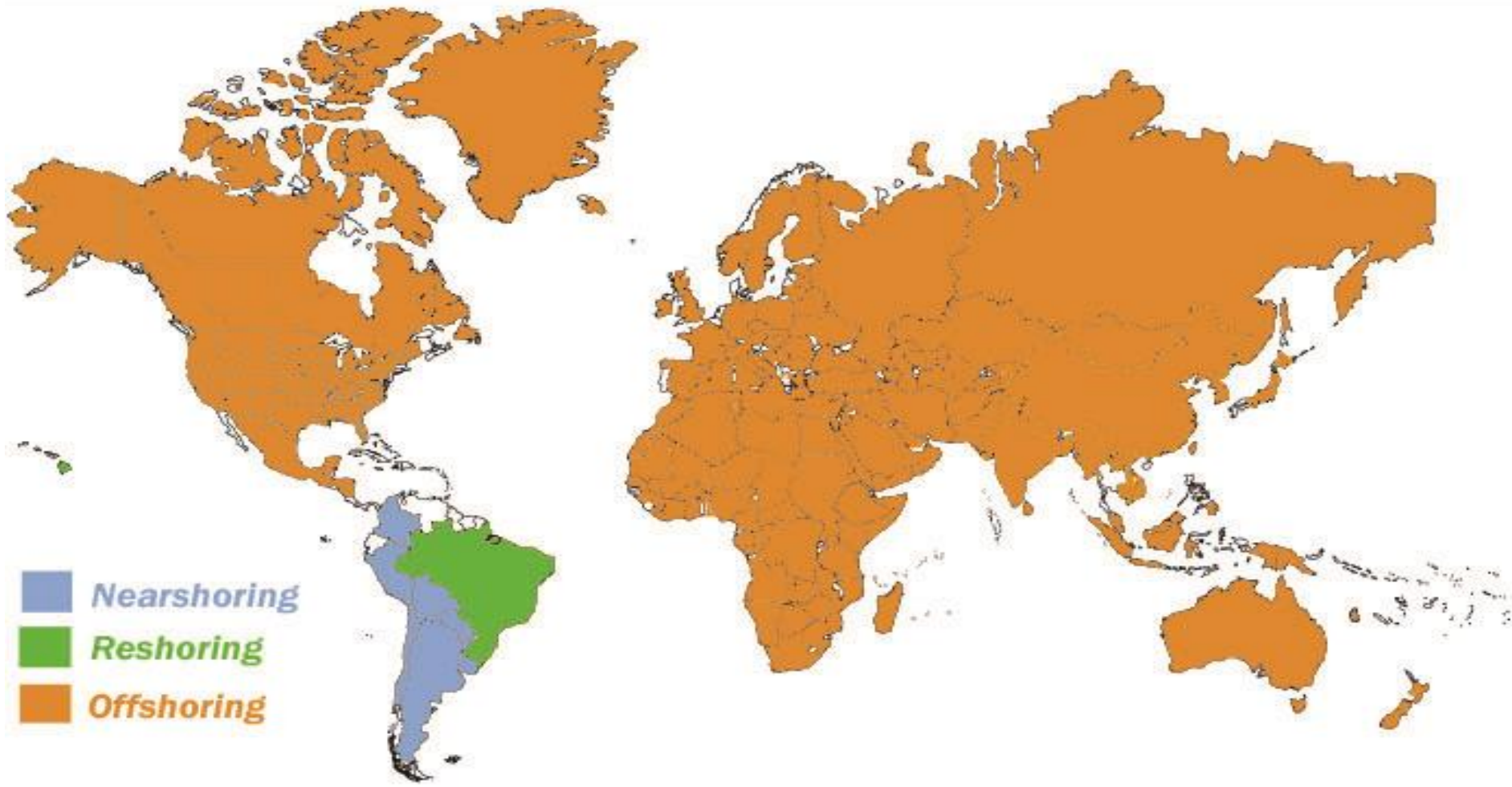
Reshoring Initiative

- Definitions:
Reshoring/Backshoring/Onshoring/Insourcing:
Bringing back the manufacture of products that will be sold or assembled here.
- Localization
- We assist companies to more accurately access their total cost of offshoring with our **Total Cost of Ownership Estimator™**



The concept works in other countries, also

Reshoring: a Brazilian perspective



Why offshoring occurred

- Cheap labor
- More efficient container shipping
- Improved communication and data sharing
- Herd mentality in which companies followed each other offshore

Corporate expectations of offshoring:

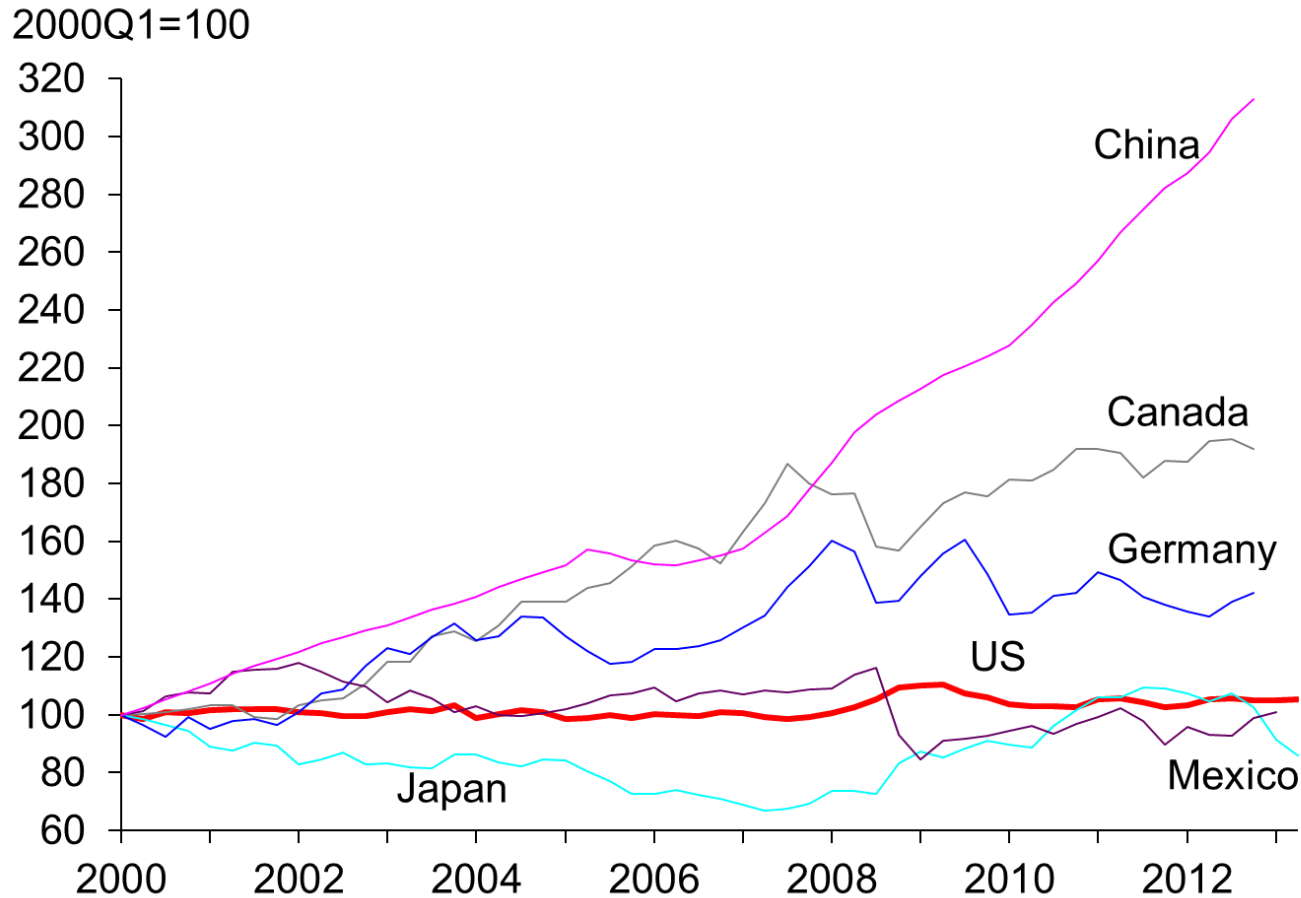
- Achieving lower prices for customers
- Pursuit of greater gross profit margins

Flawed Company Economic Model using PPV and landed cost

- As many as 60% of companies made the decision to offshore based on miscalculations, never taking into consideration the total cost of ownership (TCO) including all of the hidden costs and risks of offshoring
- 60% of manufacturers:
 - Apply “rudimentary” total cost models
 - Ignore 20% or more of the total cost of offshored products

Indexed Unit Labor Costs in the Manufacturing Sector of Selected Countries

Unit labour costs in manufacturing in US\$



Source : Oxford Economics/Haver Analytics

- Free Total Cost of Ownership (TCO) Software for companies and suppliers
- Online Library of 1000+ reshoring articles, with an Advanced Search feature
- Motivation for skilled manufacturing careers
- Economic development plan based on local sourcing
- Case Study template for posting cases

Submit a Case: Receive the Shirt!



- 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

TCO Comparison Example

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



Why Reshoring Is Happening

- Higher wages in China
- Higher global energy prices driving up shipping cost
- Increased use of Total Cost of Ownership (TCO) – Includes costs, risks, and strategic factors that were ignored over the past few decades
- TCO = more obvious costs + “hidden” costs
Total Cost = True Cost

Reshoring is the *logic* of local sourcing

TCO is the *methodology* you use to decide what to reshore

- By using TCO companies can reshore about 25% of what they offshored **and improve profitability**
- Refocusing on the world's largest consumer market
- Our companies are **30% to 40% more competitive** here in the U.S. vs. e.g. in China
- Appeal to consumer demand for “Made in USA”
- Better long-term corporate stability

Example: Electronics Contract Manufacturing - PCB

- Many companies switching from Asia outsourcing to Zentech in Baltimore, MD
- Reasons:
 - Rework, Warranty, Quality
 - Travel Cost/Time or Local Onsite Audit
 - Wages up overseas
 - **Total cost = cheaper in the U.S.**
 - Many American companies specialize in highly technical electronics, or biomedical diagnostic equipment where quality control and **engineering collaboration** are more significant factors.



- “Majority of Large Manufacturers Now Planning or considering Reshoring from China to the U.S.”
- Top three factors
 - **Labor costs** (cited by 43 percent of respondents)
 - **Proximity to customers** (35 percent)
 - **Product quality** (34 percent)

- 21% of large companies are actively engaged in reshoring, 2X the rate in 2012 (BCG survey. Press release 9/24/13)
- Americans respond well to Made in America labels
- Jobs and quality are top-ranked reasons to buy American, with over 80% of consumer support. (Consumer Preference Study 3/2014)

120,000+ Manufacturing Jobs since Jan 2010!

- Reshoring yielded:
 - About 120,000+ manufacturing jobs*
 - ~ 20% of manufacturing job growth since the Jan. 2010 low
 - ~ 240,000 total, including multiplier effect

* Source of estimate: Reshoring Initiative tabulation of jobs listed in 1140 Reshoring Library articles, 90% published since Jan 2010



Reshoring Trend

	Manufacturing Jobs / Per Year			
	2003	2013	% Change	Feasible 2016
New offshoring*	~150,000*	30-50,000*	- 70%	20,000
New reshoring	2,000*	30-40,000**	+ 1,500 %	70,000
Net reshoring	-148,000	~0	-100%	+50,000

The Reshoring Initiative's Newest Actions

- Received Manufacturing Leadership Council's Industry Advocacy Award
- **Economic development:** working intensely with PA and MS. Starting with AL and NY
- Joined AIAG team which is developing and planning to standardize a Total Landed Cost model for the auto industry
- Two new staff members training and giving presentations.

- Boothroyd Dewhurst has long positioned DFMA™ as an important tool in reducing U.S. manufacturing costs in general and labor costs in particular, to help companies be more competitive with offshore sources.
- The non-profit Reshoring Initiative further closes the gap with offshore manufacturing by helping U.S. companies understand their true cost of offshoring: their Total Cost of Ownership.



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

There is a Strong Connection Between Reshoring and DFMA™ via

innovation

- DFMA™ helps make product innovation more effective, especially when product design and manufacturing are able to partner effectively.
- Profs. Pisano and Shih of Harvard Business School recently reaffirmed that U.S. innovation declines when manufacturing is offshored because the partnership of manufacturing and engineering is weakened.

Example: Water Heaters, Refrigerators, Washing Machines



- 1300 jobs and \$800 million invested to renovate facilities in Appliance Park in Louisville, KY
- Reasons:
 - **Redesign made reshoring possible:** Energy efficiency improved, warranty costs down and retail price down
 - Tax incentives
 - High-tech new model: IP risk
 - Ease of design collaboration with workers: retail price -20%
 - Chinese cost: -30% becomes +6% considering inventory and delivery problems



- Manchester, CT
- Produces custom injection molding and medical products, **using updated highly sophisticated molding and automation, and has design team under the same roof.**
- Customer reshored from Singapore
 - Reasons: found domestic products better overall value
- Another customer reshored from Mexico
 - Reasons: cost and quality



- Reshored manufacturing from China to San Jose, Calif., in 2010
- Reasons:
 - Inventory
 - Freight cost and time
 - Distance between manufacturing and design
 - Quality
 - Total Cost

Source: The Economist. "Coming home." January 19, 2013. <http://www.economist.com/news/special-report/21569570-growing-number-american-companies-are-moving-their-manufacturing-back-united>

The Reshoring Initiative's TCO Estimator Can Factor In Innovation

- The TCO Estimator includes a cost factor for this impact that can help objectively justify keeping manufacturing close to U.S. engineering.

- 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



Industries

Industry	Reshored Cases
Electronics/Appliances/Components	41
Computer/Electronic	26
Apparel	24
Hobbies	23
Transportation	22
Plastic/Rubber	18
Fabricated Metal	18
Machinery	16
Medical	15
Wood Products	14
Energy	8
Chemicals	4
Castings	3
Primary metal	2
Non-metallic mineral products	1
Other: primarily food, services, and home and office products	20

Negative Issues Offshore

Negative Issues	Total
Lead time	111
Quality/rework/warranty	109
Rising wages and Currency Variation	88
Freight cost	82
Total cost	49
Inventory	37
IP risk/ Supply chain interruption risk	29 each
Delivery	28
Communications	18
Green considerations/Loss of control	15 each
Travel cost/time	14
Price	5
Difficulty of innovation/product differentiation/Regulatory compliance	4 each
Burden on Staff, Emergency air freight, Political instability	2 each
Employee turnover, Strained offshore relationships, Natural disaster risk	1 each



Positive Reasons to Reshore

Positive Reasons to Reshore	Total
Skilled workforce	87
Image/brand	80
Government incentives	79
Automation/Technology/3D printing	57
U.S. energy prices	49
Re-design	41
Higher productivity	36
R&D	35
Lean	27
Eco-system synergies	22
Infrastructure	20
Customer responsiveness	14
Lower real-estate/construction	8
Labor concessions	7

Countries From Which Reshored

Country	Reshored Cases	Global Regions	Reshored Cases
China	135	Asia	165
Mexico	20	North America	26
India	11	Western Europe	6
Canada	6	Eastern Europe	2
Japan	5	South America	1
Taiwan	5	Africa	1
Korea	3		
Hungary	2		
Vietnam	2		
Germany, France, Brazil, Spain, Netherlands, Italy, Egypt, Indonesia, UK, Singapore, Malaysia, Sri Lanka, Australia	1 each		



Karen Kane



Some reshorners

- Commerce Dept:

- Worked closely with The Commerce Department to develop their ACE Tool which helps U.S. Businesses Fully Assess the Advantages of Manufacturing and Sourcing in America.
- <http://acetool.commerce.gov>
- 2012 budget specifies TCO.
- 4 Links from the Commerce Dept to the Reshoring Initiative:
- Testified at Congressional hearing on 3/28/12



April 2014 – Congressional Visitors Center





Local Skilled Workforce Recruitment

Issue	Solution
“Trades” and “vocations” image	Call them “Professions”
Manufacturing career image due to offshoring	Industry collect and media report the local reshoring case of the month. Use our Case Studies feature.



Economic Development Program Available

Action	Source/Responsibility
Identify local imports by company	Datamyne
Suggest to companies they source locally	EDO/MEP/ etc.
Train companies on TCO to overcome issue of higher local price	Reshoring Initiative
Needed further cost reductions	Manufacturing Extension Partnership (MEP) Boothroyd Dewhurst, DFMA

- By understanding:
 - the advantage of producing near the consumer, and
 - the small TCO gap instead of the large price gap
- U.S. companies can:
 - justify domestic investment, process improvement, automation, training, etc.
- And do not have to sacrifice quality, delivery, time-to-market, or employees to be competitive and profitable.

What can you do?

- Use the tools for sourcing and selling. Free at www.reshorennow.org
- Have us train your supply chain and sales force
- Use our archived webinars to inform staff and customers
- Post a link to our site www.ReshoreNow.org
- Call on us to speak at: open houses, webinars, customer industry conferences
- Submit customer cases of reshoring for publication and posting using our template.
- Sponsor

A non-profit with 35 sponsors, including

Platinum



Gold



Silver



A non-profit with 35 sponsors

Bronze



Steel



Iron



Help slow the offshoring flood now!

Reshoring Initiative
Bringing Manufacturing Back Home

Contact:

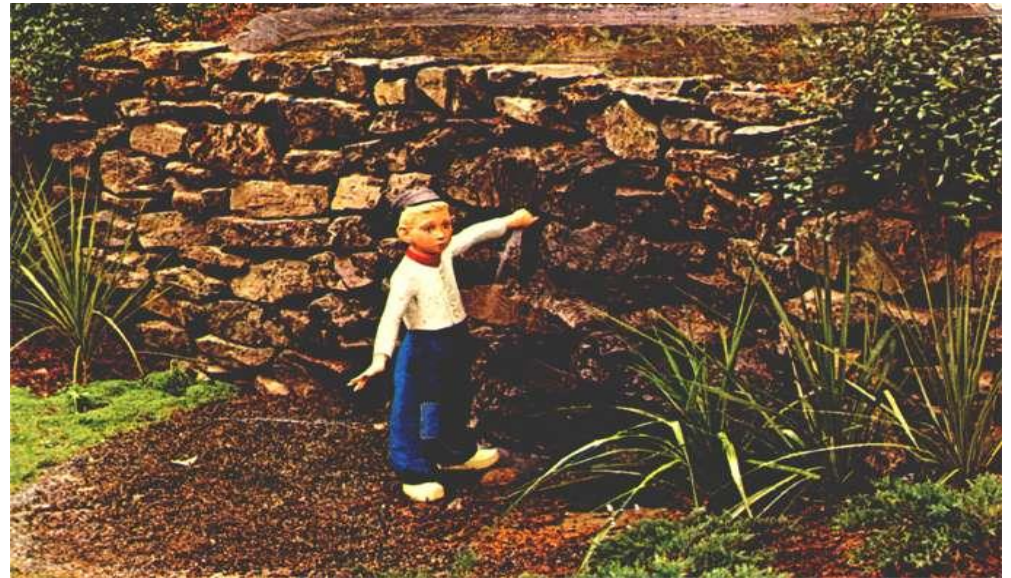
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