



Reshoring Initiative

Bringing Manufacturing Back Home

To reshore or offshore?
How to help your customer objectively decide.

MS 4/23/15

Harry Moser
President
Reshoring Initiative

Top Supply Chain Priorities In The Next 12 Months

Reduce costs/eliminate waste

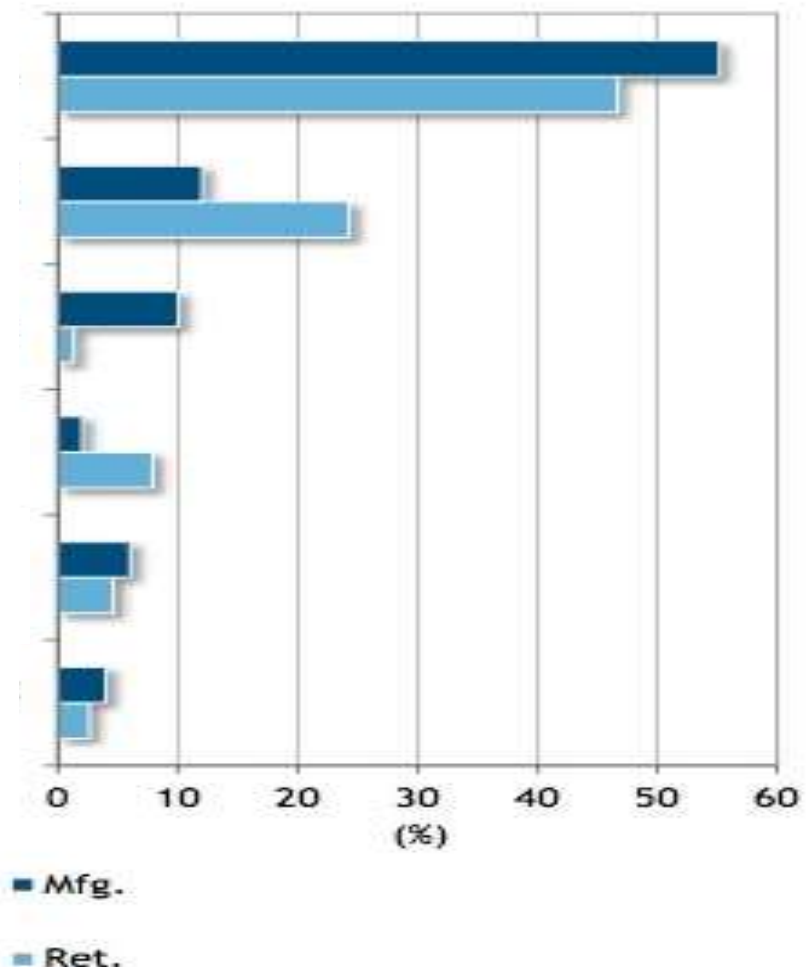
Become more customer centric/improve service performance

Improve product compliance, quality, safety or environmental sustainability

Improve supply chain visibility

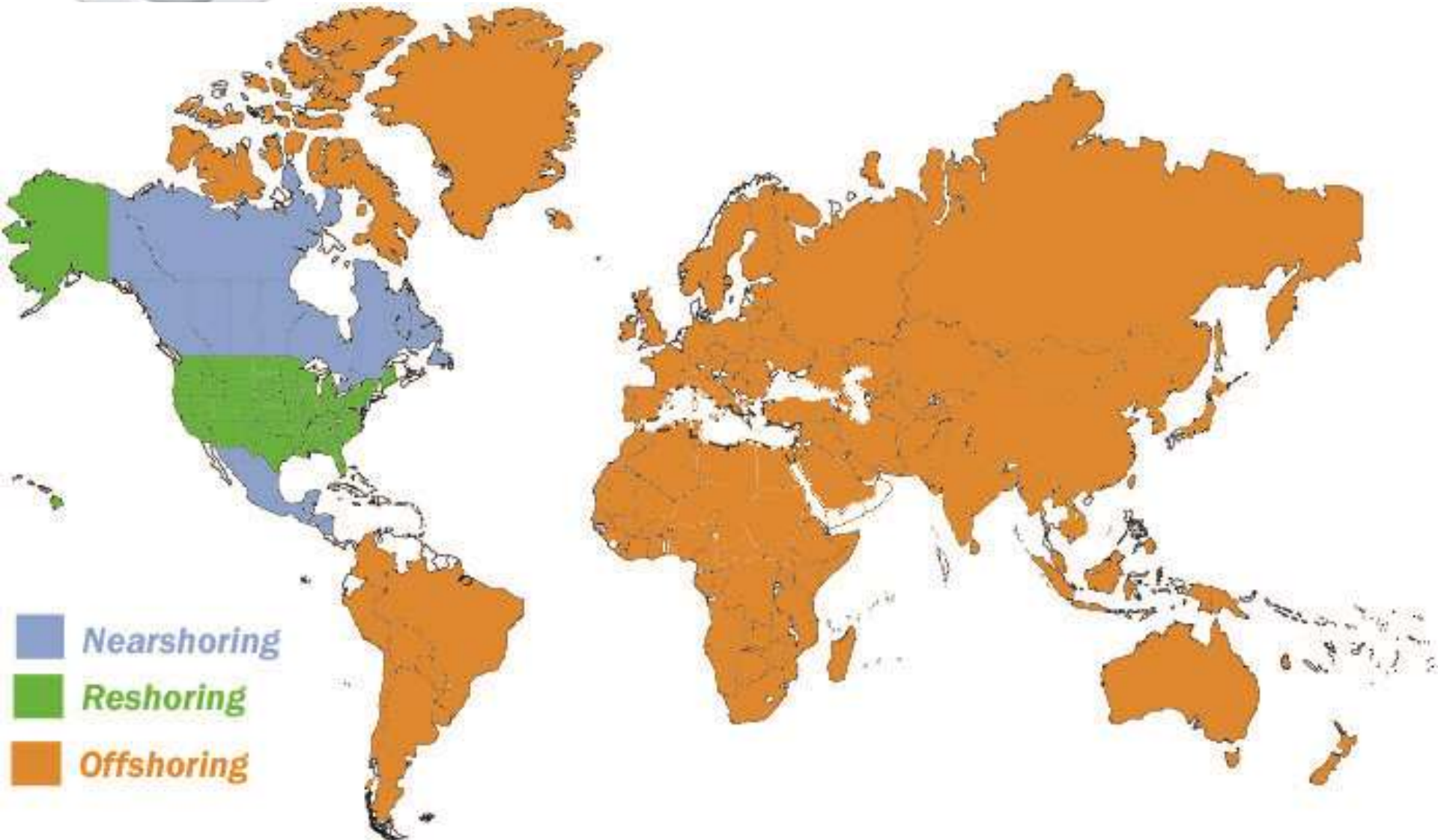
Respond more quickly to demand volatility or changes (supply chain agility)

Improve the process of bringing new products to market



- Reshoring/Backshoring/Onshoring/Insourcing: Bringing back manufacture of products that will be sold or assembled here.
- Transplants/FDI: Similar logic
- Producing near the consumer!
- Localization

Geographic sourcing alternatives





Flawed company economic model

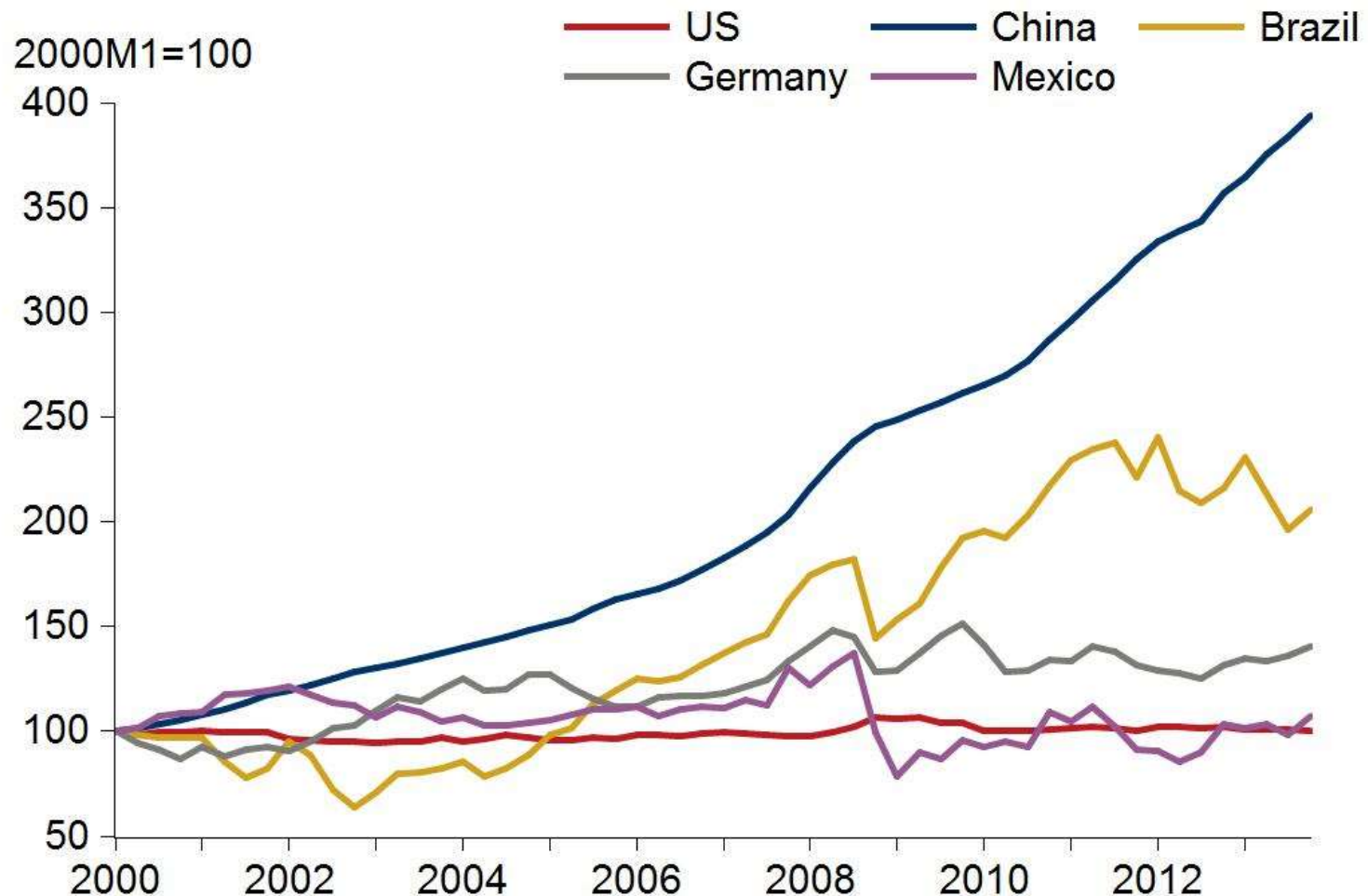
60% of manufacturers:

- Apply “rudimentary” total cost models
 - Wage Arbitrage
 - PPV (Purchase Price Variance)
 - Landed Cost
- Ignore 20% or more of the total cost of offshored products

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

Indexed Unit Labor Costs in the Manufacturing Sector of Selected Countries

US: Unit labor costs in manufacturing in US\$



Source: Oxford Economics/Haver Analytics

“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

The Industry-Led Reshoring Initiative Provides

- Free Total Cost of Ownership (TCO) software for:
 - Companies for sourcing
 - Suppliers of parts and equipment for selling
- Online Library of 2,200+ reshoring articles
- Statistics from TCO and Library databases
- Case Study template for posting cases.
- Solutions to major supply chain problems
- Motivation for skilled manufacturing careers

- 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.
- Explanations and references to help select values.
- Instructions

TCO Example: 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%

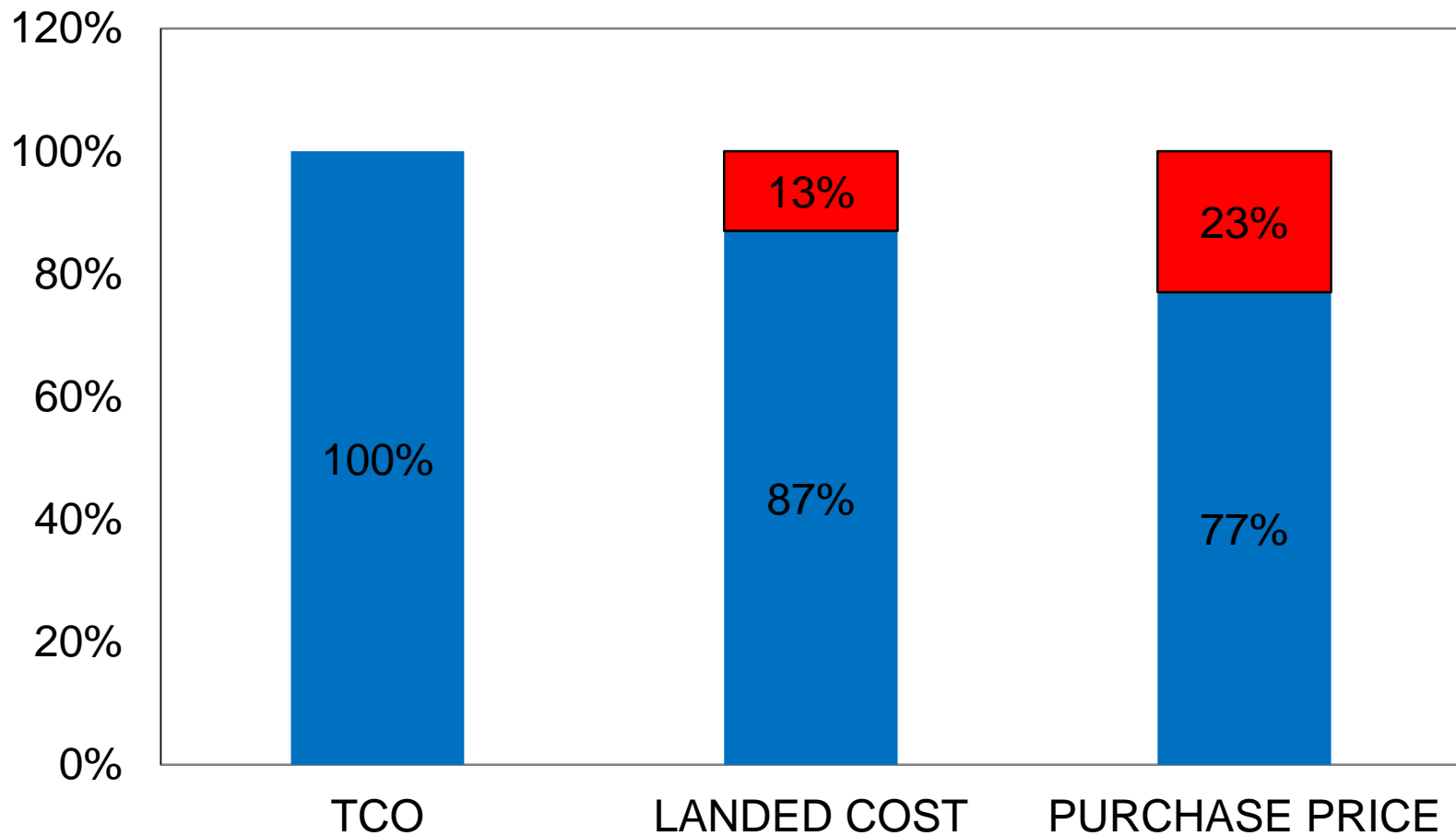
* Chinese differential vs. U.S.

TCO Comparison Example

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



PPV and Landed Cost Miss a lot of TCO



Comparison Basis	% of cases where U.S. has the advantage
Price	5%
TCO	53%
Difference	48%*

*Conservatively 25% might return if companies shifted to TCO

Source: TCO user database

- “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 check 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

- Skilled labor shortage
- Experienced management shortage
- Currency manipulation
- Insufficient ecosystem
- Cost of transition
- Lack of scale
- Lack of political commitment

Source: *Is re-shoring electronics manufacturing all hype?*

Steven Linahan, Venture Outsource

Some Reshorners

Reshoring Initiative
Bringing Manufacturing Back Home



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Bringing Production back from China:

- Water-heaters, fridges, and washing machines
- Unionized facility in Louisville, KY
- 1300 jobs, renovated facility, \$800 million invested
- Reasons:
 - Tax incentives
 - High-tech new model
 - Ease of design collaboration with workers: retail price -20%
 - 2 tier contract
 - Chinese cost: -30% becomes +6% considering inventory and delivery problems
- Will move a “significant piece” of appliance production back

LED Lighting (Transplant)



- Netherlands to Tupelo, MS
- 50 new jobs
- \$2 million investment
- Reasons:
 - Government incentives
 - “A public-private partnership that works”



Leather Tanning (Transplant)



- Germany to Vicksburg, MS
- 366 jobs
- \$10.1 million investment
- Reasons:
 - Lead time/time to market
 - Quality
 - Proximity to North and South American markets
 - Government incentives

Truck & Bus Tires

(Transplant)



- Japan to West Point, MS
- 500 jobs initially
- \$300 million capital investment
- Reasons:
 - Lead time
- Future investment could total \$700 million and bring another 1500 jobs

Automotive Electric Switches and Magnetic Systems



- Pelahatchie, MS
- Won Chrysler contracts over Mexican, Korean suppliers
- Reasons:
 - Quality: “zero defects record”
 - “Trust”
 - Price

Source: Jeff Amy, “Miss. Aims to lure factories from other countries.” *Business Week*. August 21, 2012.

Ted Carter, “Mississippi getting the nod in reshoring decisions.” *Mississippi Business*. August 26, 2012.

Wally Northway, “Is onshoring the new trend? Local manufacturers finding a more level playing field.” *Mississippi Business Journal*. November 29, 2013.

Wood Pellets (Kept from Offshoring)



- Port of Pascagoula, MS
- 140 jobs
- \$115 million investment
- Reasons:
 - Government incentives
 - Raw materials
 - Infrastructure

Source: Wally Northway, "Is onshoring the new trend? Local manufacturers finding a more level playing field." *Mississippi Business Journal*. November 29, 2013.

"Green Circle Bio Energy to Expand in Mississippi." *Forest2Market*. July 12, 2013.

Recliners (Kept from Offshoring)



- Potontoc, MS instead of China
- Reasons:
 - Image/brand

Toyota Corolla (Transplant)



- Japan to Mississippi
- “Exporting Mississippi-built Toyotas directly supports 2,000 Toyota jobs”

Battery-Powered Cars (Kept from Offshoring)



- Horn Lake, MS
- 426 manufacturing jobs
- Reasons:
 - Government incentives
 - Image/brand
 - Quality



Source: Michael Clark, "Tiny cars create huge impact in north Mississippi." *WLOX*. July 6, 2012.

Alan Ohnsman, "GreenTech to take first U.S. MyCar order from Domino's." *Bloomberg*. July 5, 2012.

Haley Barbour and Terry McAuliffe, "Made in America: States and Businesses Can Restore American Manufacturing." *Huffington Post*. July 23, 2012.

Automotive Parts for Nissan (Transplant)



faurecia

- France to Madison, MS
- 180,000 sq. ft.



- China, Canada to Booneville, MS
- \$1.6 million investment in call center
- 162 call center jobs
- Previous investments: \$55 million and 300 jobs at distribution center

Source: "Acco Brands investing \$1.6 million, adding 162 workers." April 23, 2014. AP.

Michael Sheffield. "ACCO Brands bringing 162 jobs to Mississippi." Memphis Business Journal, April 22, 2014.

- Walmart's increase in U.S. manufactured purchases:
 - \$250 Billion over 10 years
 - \$50 Billion in the 10th year
 - In the 10th year:
 - Approx. 300,000 manufacturing jobs*
 - Approx. 1 million total jobs**
- Walmart Actions:
 - “Increase what we already buy of U.S. manufactured goods
 - Source “new to Walmart” U.S. manufactured goods
 - Reshore the manufacturing of goods we currently buy by facilitating and accelerating efforts of our suppliers”
- <http://engage.walmart-jump.com/>

*Reshoring Initiative **Boston Consulting Group

- **1888 Mills** in Griffin, Georgia –Long term deal to make better quality towels. Capital investment required due to volume. “We made a commitment that was longer term than we would normally do.” Walmart

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



- 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

Survey Results

- BCG:
 - % of Mfg. Exec's survey Oct 2014:
 - Interested: 37%/54%*
 - Actively reshoring: 7%/16%*
 - China cost advantage: 5%
- Alix Partners survey, March 2014:
 - Decision to reshore/nearshore Very Important: 18%/27%*
- 40% of contract manufacturers have done reshoring work this year (MFG.com 4/12)
- We have a summary of 15 surveys on consumer preferences for Made in USA (*Comparing 2012 to 2014)

The Bleeding has Stopped

Manufacturing Jobs/Year			
	2003	2014	% Change
New Offshoring	~150,000*	30,000-50,000*	-70%
New Reshoring & FDI	12,000*	60,000**	+ 400%
Net Jobs Gained	~-140,000	~+10,000	N/A

* Estimated ** Calculated

Reshored Industries

Industry	Jobs	Companies
Transportation Equipment	13823	33
Electrical Equipment, Appliances, Components	9240	58
Computer/Electronic Products	3483	25
Machinery	2860	20
Apparel/Textiles	2154	46
Fabricated Metal Products	1721	39
Food	1628	9
Wood Products	1028	18
Medical Equipment	738	17
Hobbies	723	29
Construction	577	4
Plastic/Rubber Products	470	16
Castings	57	8
Non-Metallic Mineral Products	12	1
Primary Metal Products	0	5
Chemicals & Energy	0	1 each
Other: Agriculture, Environmental, Tools, Research & Services, Home & Kitchen, Office	1016	24

Sources:
Reshoring
Initiative Library.

Cases 2007
through 12/31/14.



Negative Issues Offshore

Negative Reasons not to Offshore	Companies	Negative Reasons not to Offshore	Companies
Quality/rework/warranty	116	Difficulty of innovation/product differentiation	10
Freight cost; Lead time/time to market	90 each	Duties/Tariffs/Customs	8
Rising wages	63	Emergency air freight	7
Total cost, TCO	62	Burden on staff	6
Delivery	45	Regulatory compliance	5
Inventory	42	Political instability, Social/ethical concerns	4 each
Communications	26	Employee turnover, Onsite audit cost, Product liability, Strained offshore relationships	3 each
Intellectual property risk	23	Natural disaster risk, Storage/warehousing cost	2 each
Loss of control	22	Loss of customer responsiveness, Personnel risk, Management difficulty	1 each
Supply chain interruption risk, Travel cost	21 each		
Currency variation	16		
Green considerations	15		
Price	14		



Positive Reasons to Reshore

Positive Reasons to Reshore	Cases	Positive Reasons to Reshore	Cases
Image/brand	58	Infrastructure; Raw materials cost/quality	11
Automation/technology	53	Proximity to market, suppliers	10
Re-design of the part	40	Improved Logistics, Logistics Costs	7
Government Incentives; Walmart	35 each	3D Printing/Additive manufacturing, Improved customer service	5 each
Skilled workforce availability/training	34	Lower real-estate/construction cost, Customization/Flexibility, Local economy/Patriotism	4 each
Higher productivity; Lean or other business process improvements; Manufacturing/Engineering joint innovation	27 each	Reduced capital expenditure, Corporate responsibility, Economic Development Organization Support, Macroeconomics	3 each
U.S. price of natural gas, chemicals, electricity	18	Vertical integration or other business strategy, Improved response time, Increased cost-competitiveness, Supply consistency, Existing factory/capacity	2 each
Contracted/Customers Reshoring	16	Improved cash flow, PR, Location, Cost of replacement parts, Improved supplier relationship	1 each
Customer responsiveness improvement	14		
Labor concessions	13		
Eco-system synergies/Localization	12		

Source: Reshoring Initiative Library, December 2014.

Countries From Which Reshored

Global Region	Cases
Asia	241
North America	37
Western Europe	12
Eastern Europe	5
Australia/Oceania	4
Middle East	2
South America	1
Africa	0

Country	Cases
China	194
Mexico	27
Unknown Country	13
Canada	10
Taiwan	9
Japan	8
India	7
Italy	6
Korea, Malaysia, Hungary	3 each
Vietnam, Australia, Indonesia, Germany, United Kingdom	2 each
Singapore, Sri Lanka, Egypt, France, Brazil, Spain, Russia	1 each

Jobs Reshored by State

State	Jobs	Cases	Jobs/ Facility	State	Jobs	Cases	Jobs/ Facility	State	Jobs	Cases	Jobs/ Facility
SC	7530	8	941	MS	540	5	108	MN	64	10	6
TX	3792	13	292	IN	400	8	50	NJ	60	3	20
KY	3412	4	853	AL	397	4	99	MT	25	1	25
GA	3145	8	393	PA	384	16	24	CT	0	4	0
TN	3137	15	209	WI	349	17	21	DE, AZ, VT	0	2 each	0
OH	2739	24	114	AR	240	5	48	VA, OK, ID, UT, NV, ND	0	1 each	0
MI	1742	16	109	IL	232	14	17				
NY	1165	19	61	OR	230	4	58				
NC	1020	15	68	RI	200	3	67				
KS	1000	2	500	NH	200	2	100				
MO	980	8	123	IA	193	2	97				
CA	884	34	26	WA	150	3	50				
CO	738	8	92	MD	90	6	15				
FL	611	13	47	ME	78	4	20				
MA	598	10	60								

Sources: Reshoring Initiative Library, December 31, 2014. Cases 2007 through 12/31/14.

- Balance the \$500 billion trade deficit:
 - 3 million manufacturing jobs
 - Cut U.S. budget deficit by about 50%
 - Reduce unemployment about 4 percentage points
 - 25% increase in manufacturing
 - If spread over 20 years: 25% extra annual capital equipment investment

- Commerce Dept:
 - 2012 budget specifies TCO.
 - Links:
 - <http://nist.gov/mep/reshoring.cfm>
 - <http://business.usa.gov/program/reshoring-initiative>
 - http://www.manufacturing.gov/other_orgs.html
 - **Major new site:**
<http://acetool.commerce.gov/>
 - 6 rounds of free MEP webinars
 - Testified at Congressional hearing on 3/28/12
 - Working actively with SelectUSA
- Calls from:
 - United States-China Economic and Security Review Commission
 - White House National Economic Council





Employment Projections

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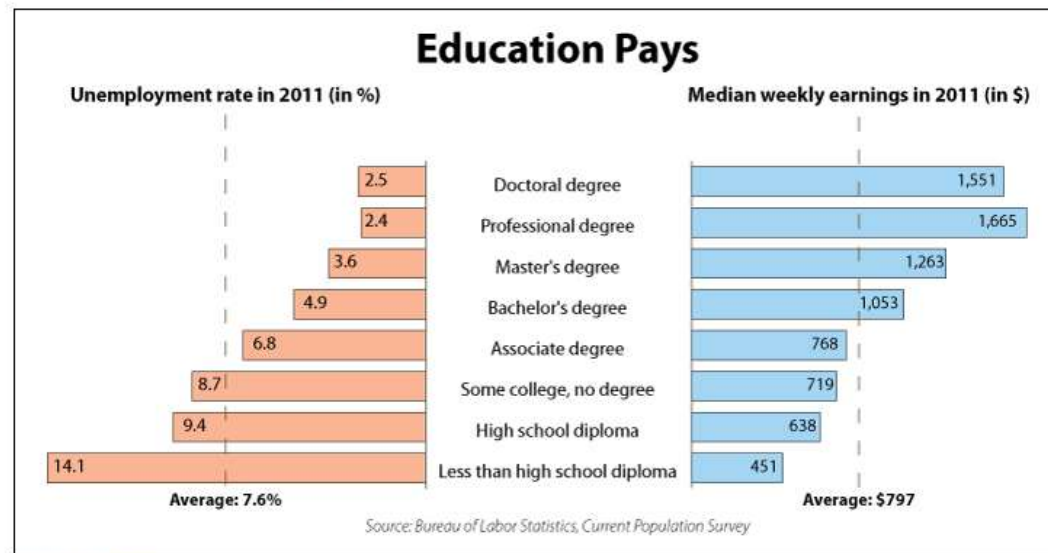
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Education pays...

Education pays in higher earnings and lower unemployment rates



[Chart data \[TXT\]](#)

Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers.

Source: Bureau of Labor Statistics, Current Population Survey.

BLS has some data on the [employment status](#) of the civilian noninstitutional population 25 years and over by educational attainment, sex, race, and Hispanic origin online.

The Census Bureau also has some data on [educational attainment](#) online.

**WE NEED
YOUR
HELP!**



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 Starting in PA, MS, Central NY

Action	Source/Responsibility
Identify local imports by U.S. or foreign companies	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	MEP/ Comm. College/ Technology Suppliers/EDO

How you can help reshoring

- Use the tools for sourcing and selling.
Free at www.reshorenow.org
- Use our archived webinars to inform staff and customers
- Post a link.
- Call on me to speak at: open houses, webinars, customer industry conferences
- Submit cases of reshoring.

- Data on reshoring by others
- Consumer preference data
- Training on TCO
- Help with the analysis
- Ideas for managing the transition
- Promotion of your success

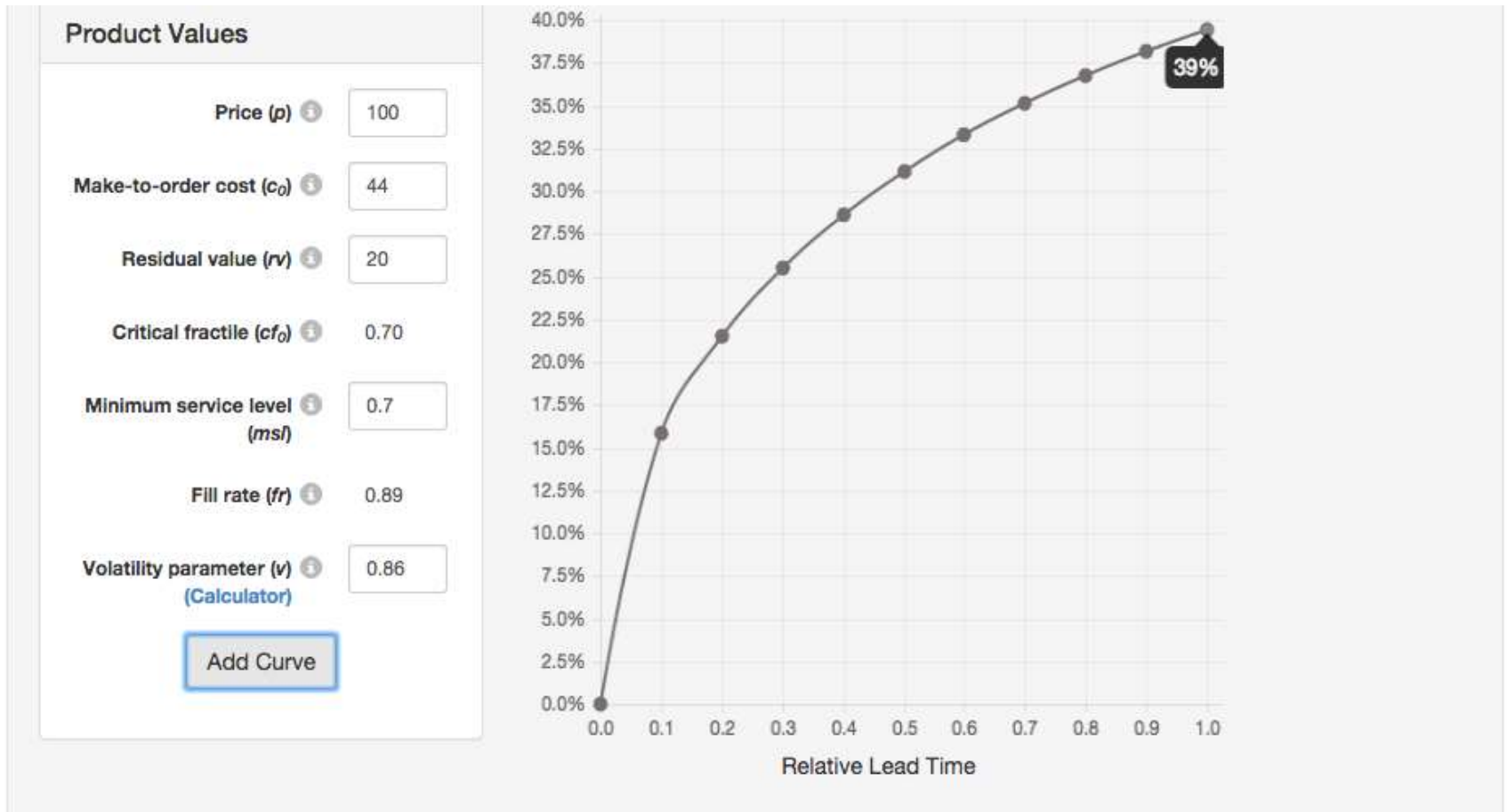
- ACETool
 - Cost Differential Frontier
- TCO Estimator
- Using the TCO Estimator: A How-To Guide
- Library
- Submit a Case Study
- Economic Development Program

- Based on lead time and variability in order rates
- Quantifies the cost of excess inventory, obsolescence and lost orders
- Developed by Prof. Suzanne de Treville, Univ. of Lausanne
- Can add 15% to 20% to the offshoring costs identified by the TCO Estimator

Product A

- Demand peak 3X median demand 1 in 10 demand periods (high volatility)
- Selling price \$100
- Local production cost \$44, offshore production 30% cheaper
- Liquidation value after the demand period \$20

Local production dominates



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
- Maximize the advantages of proximity
- Match “Chinese” price or?

How to get started

- Ask about pain and opportunities:
 - Delivery/air freight
 - Orders lost due to delivery or slow response
 - Quality
 - Excess inventory
 - Travel
 - Late night calls
 - IP loss or risk
 - Regulatory issues
 - Purchase price rising
 - Corruption
 - Violence
 - Natural disasters or political instability



W. Coast Ports: A Teachable Moment

- Up to a month's delay
- Subaru had \$59M/month air freight expense
- Demonstrates the risk of complex global supply chains

- 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.

- ACETool
 - Cost Differential Frontier
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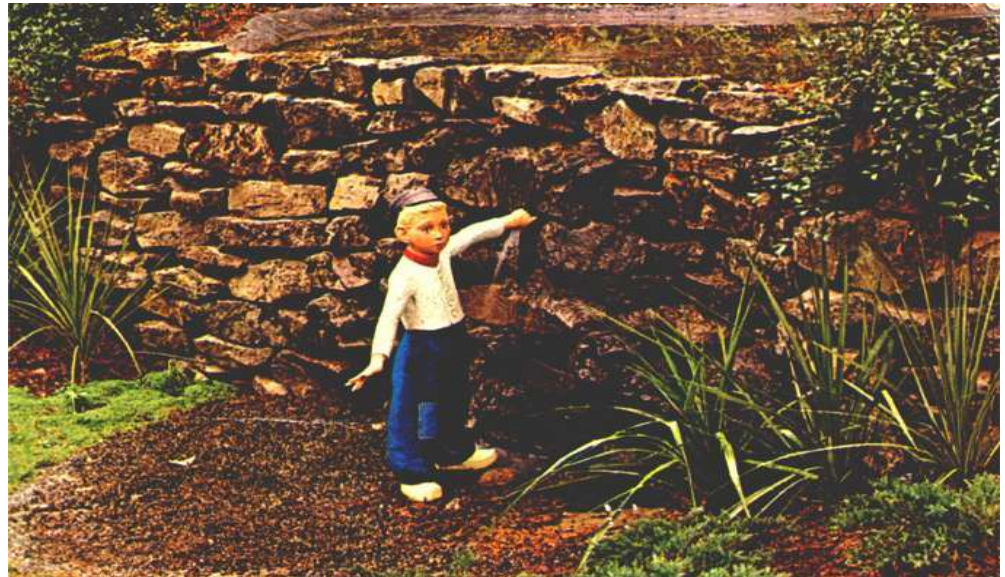
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Recruiting trainees for the skilled manufacturing workforce:

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