# From Off-Shoring to On-Shoring to Regional Strategy

## Findings from IPC Studies

IPC – Your Source for Electronics Industry Market Research

# Evolution of On-Shoring

- Globalization
  - Put western manufacturers in direct competition with manufacturers in low-cost areas
  - Operations and sourcing were globalized to level the playing field

# Evolution of On-Shoring

- Off-shoring
  - High-volume production moved to low-cost areas
  - Some advanced manufacturing moved as quality and technical capabilities advanced in China
  - Supply chain expanded to support manufacturing growth in low-cost areas

# Evolution of On-Shoring

- Off-shoring slows
  - Most of what has moved overseas will not come back
  - Some operations that went off-shore for lower costs may not have met expectations, and may need to be re-evaluated

# Evolution of On-Shoring

- On-Shoring emerges
  - Anecdotal evidence supported by IPC studies since 2012
  - Very small amount of on-shoring documented, but it is continuing
- On-shoring becomes "right-shoring" or global operations strategy
  - New way of thinking about operations planning
  - Strategic rather than tactical

# What we mean when we talk about this topic

- Re-shoring: implied scope is operations moved overseas and then moved back
- On-shoring: broader scope, including new domestic operations, acquisitions and domestic sourcing
- Right-shoring: on-shoring with strategic implications (i.e., regional strategy)

# Drivers of off-shoring

- Original drivers
  - Primarily cost
  - The need to level the playing field with global competitors
- Today's drivers
  - Still cost and competition
  - Serving overseas markets
  - Shortening supply lines

# Drivers of on-shoring

- Growing industry awareness of hidden costs of off-shoring
- High wage growth in China
- Potential for supply chain disruptions
- Rising shipping costs
- Need to be close to domestic customers
- Implementing innovations
- Time to market
- Concern about future of domestic industry

# Status of On-Shoring: What We Learned From IPC Research

- First survey in 2012 found:
  - Some very limited on-shoring was reported
- Update survey in 2013 showed:
  - More on-shoring, although still small
  - Interest in on-shoring continues
- Impact survey in 2014 examined:
  - How on-shoring affects operational and business performance

# Recent On-Shoring Activity

# Companies Reported Moving Operations to North America

- In 2012 survey, 25 of 229 responding companies reported on-shoring some operations since 2009
- In 2013, 15 of 92 responding companies reported on-shoring since beginning of 2012 and 9 plan to move more operations by the end of 2014
- Even more companies reported creation of new operations in North America

Self-selecting survey samples mean percentages are not representative; the key point is that some on-shoring is occurring.

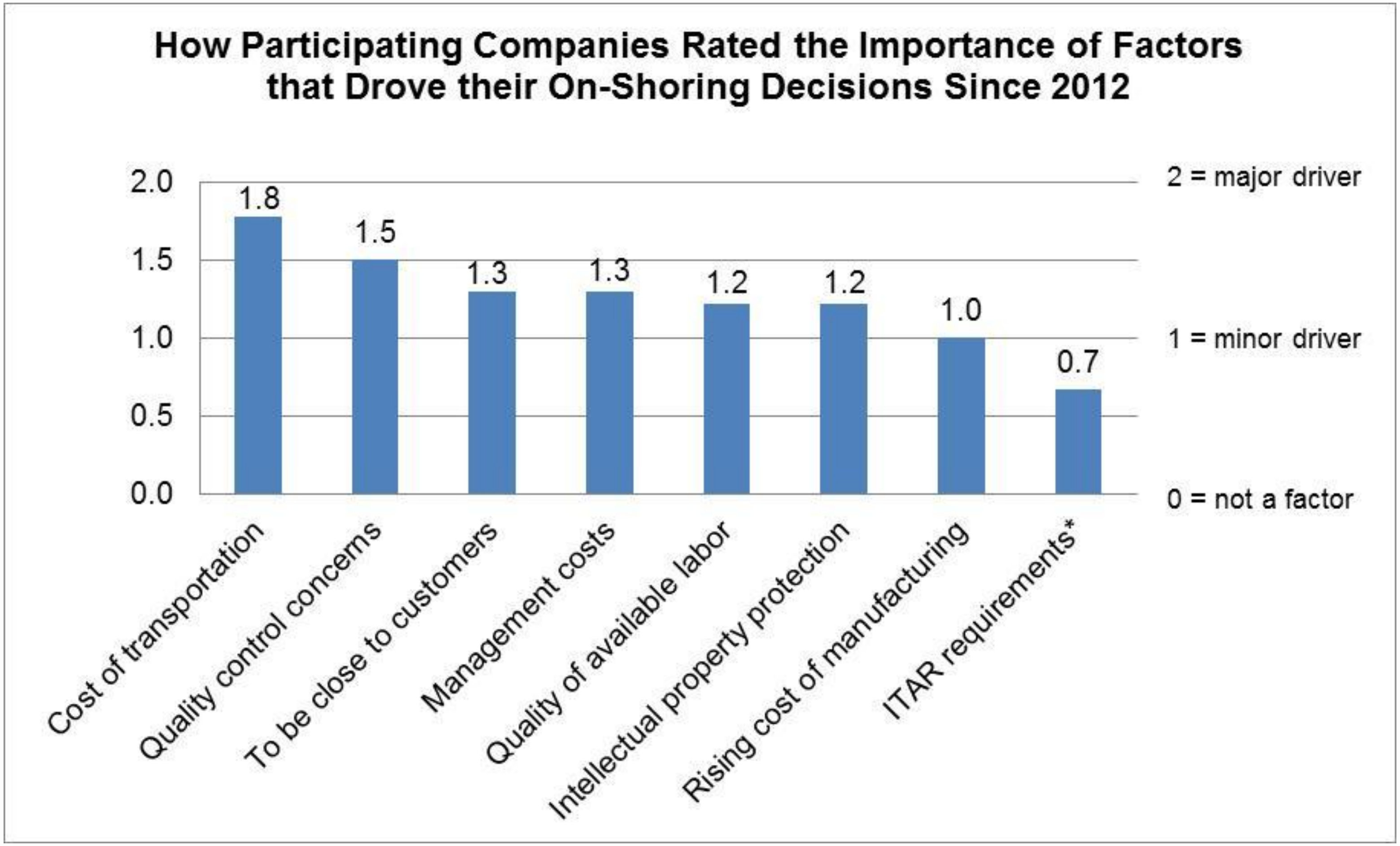
# Types of On-Shoring Reported

- Most on-shored facilities are manufacturing, also some distribution, customer service, purchasing, sales and engineering design
- Types of manufacturing on-shored:
  - PCB assembly and box build
  - PCB fabrication
  - Telecom network equipment
  - Power adapters
  - High-value consumables and solder

# Types of On-Shoring Reported

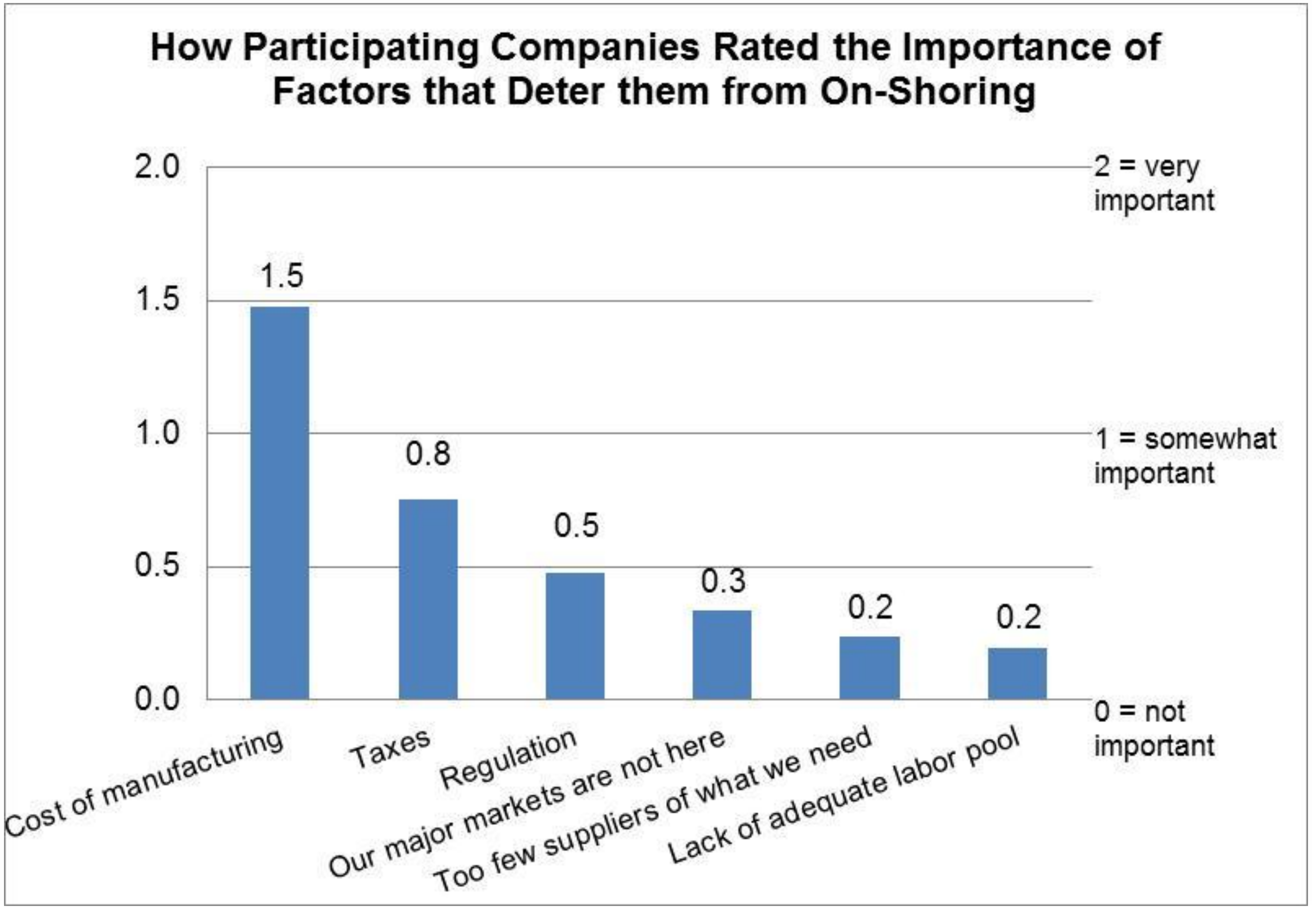
- Most operations moved from China to the US, some to Mexico
- Industry segments doing the most on-shoring: OEMs and EMS companies

# On-Shoring Drivers




* ITAR was a major driver for government contractors and not a factor for the others.

# Deterrents to Locating Operations in North America



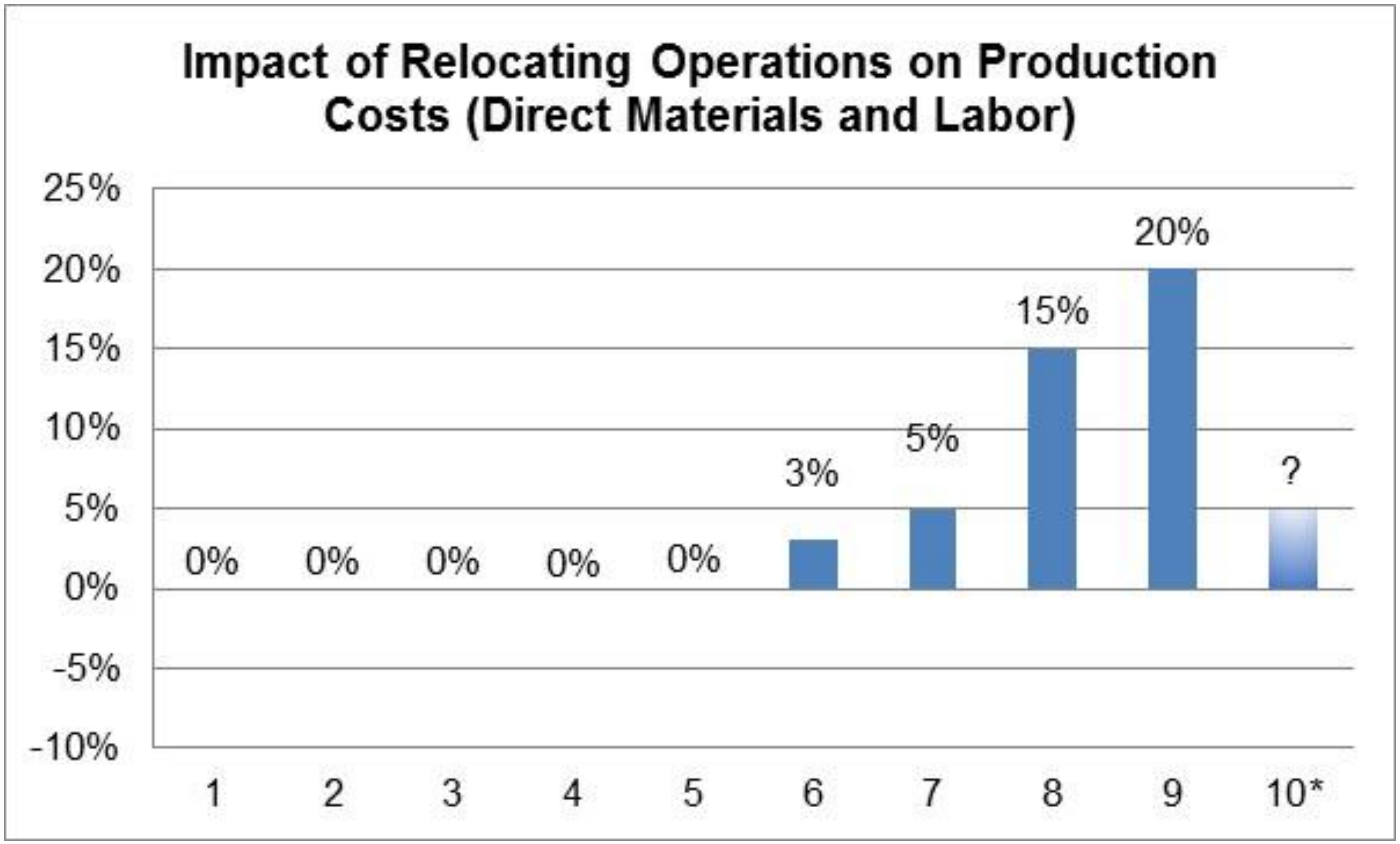
# Other Deterrents

- For many EMS companies, their big customers determine their location
- Concentration of EMS providers in Asia makes it more costly and less efficient to manufacture in North America
- Concentration of suppliers in Asia adds cost to bring parts from there to the US

# On-Shoring Impact on Business Performance

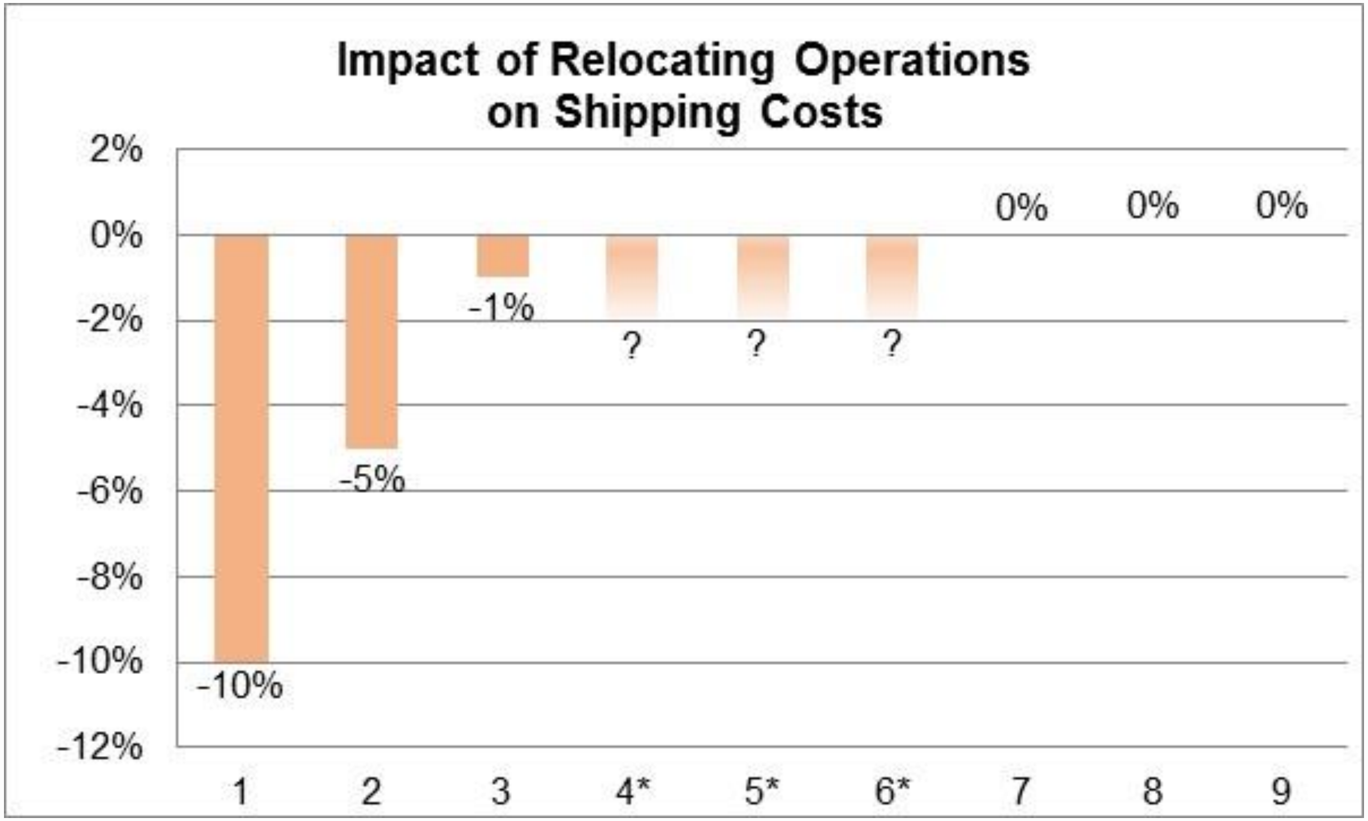
## Findings from January 2014 Survey

# Production Costs Increased for Half of Reporting Companies




*Could not quantify

# Shipping Costs Declined for 2/3 of Reporting Companies

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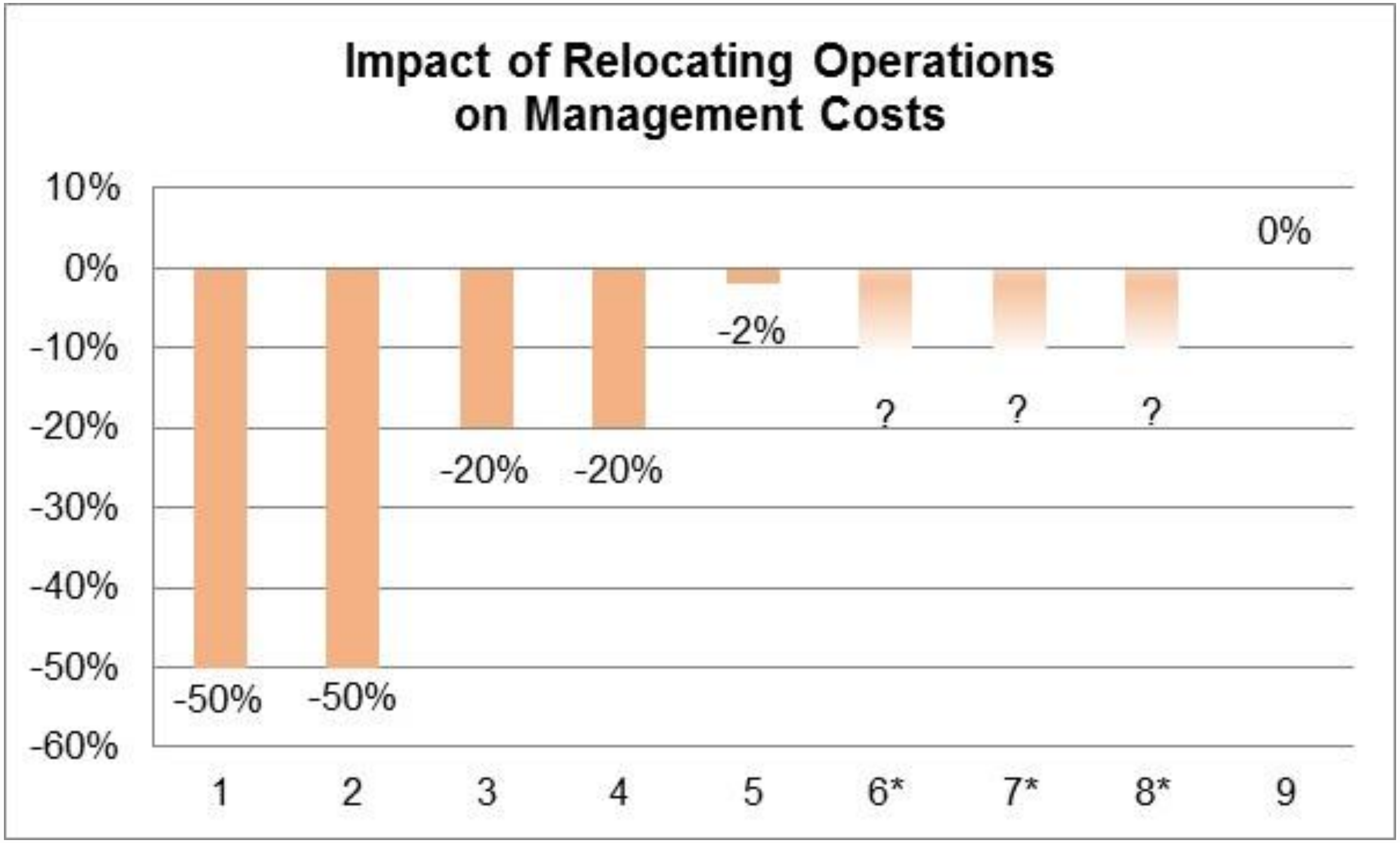
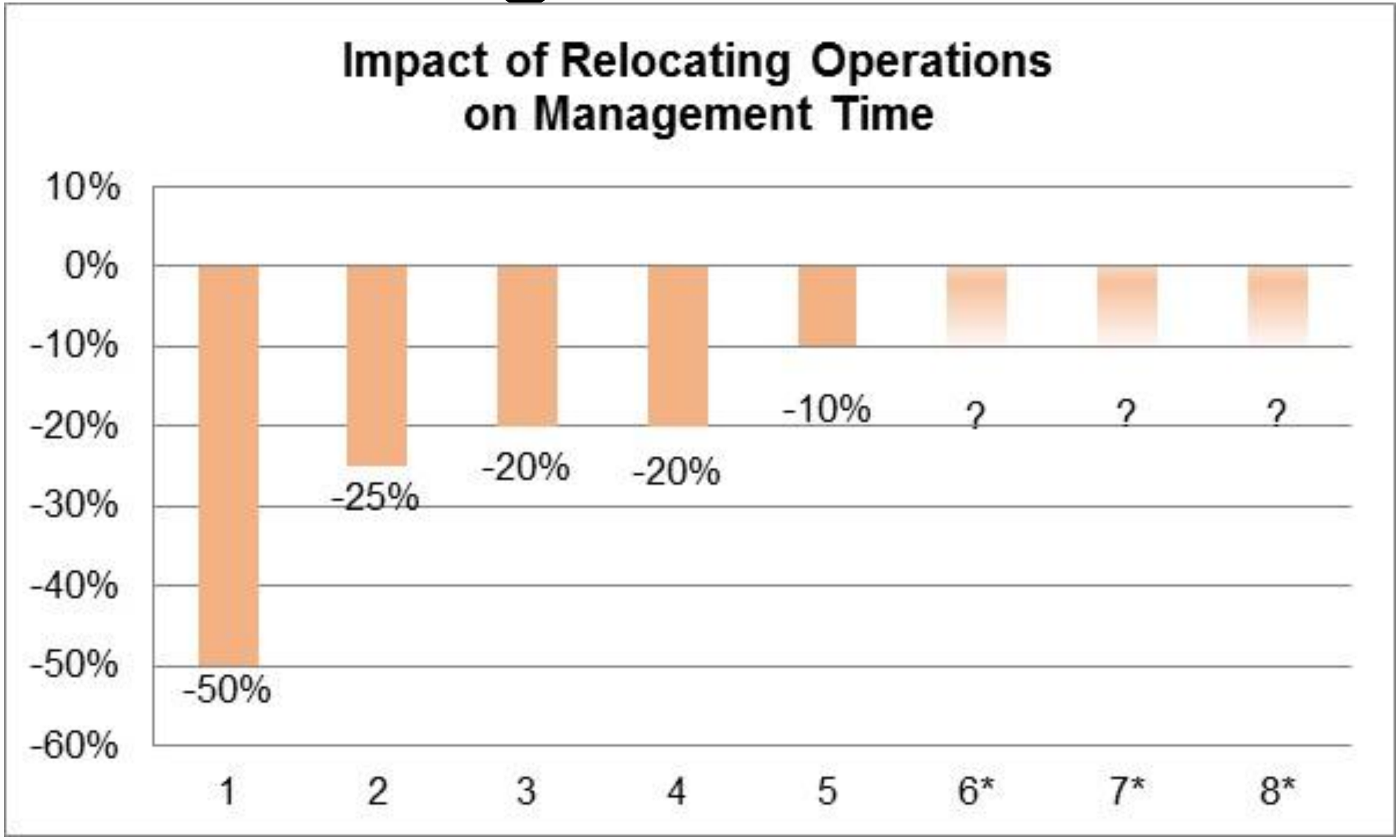
# Management Costs Declined for Most Reporting Companies




*Could not quantify

# All Companies Reported Reduction in Management Time

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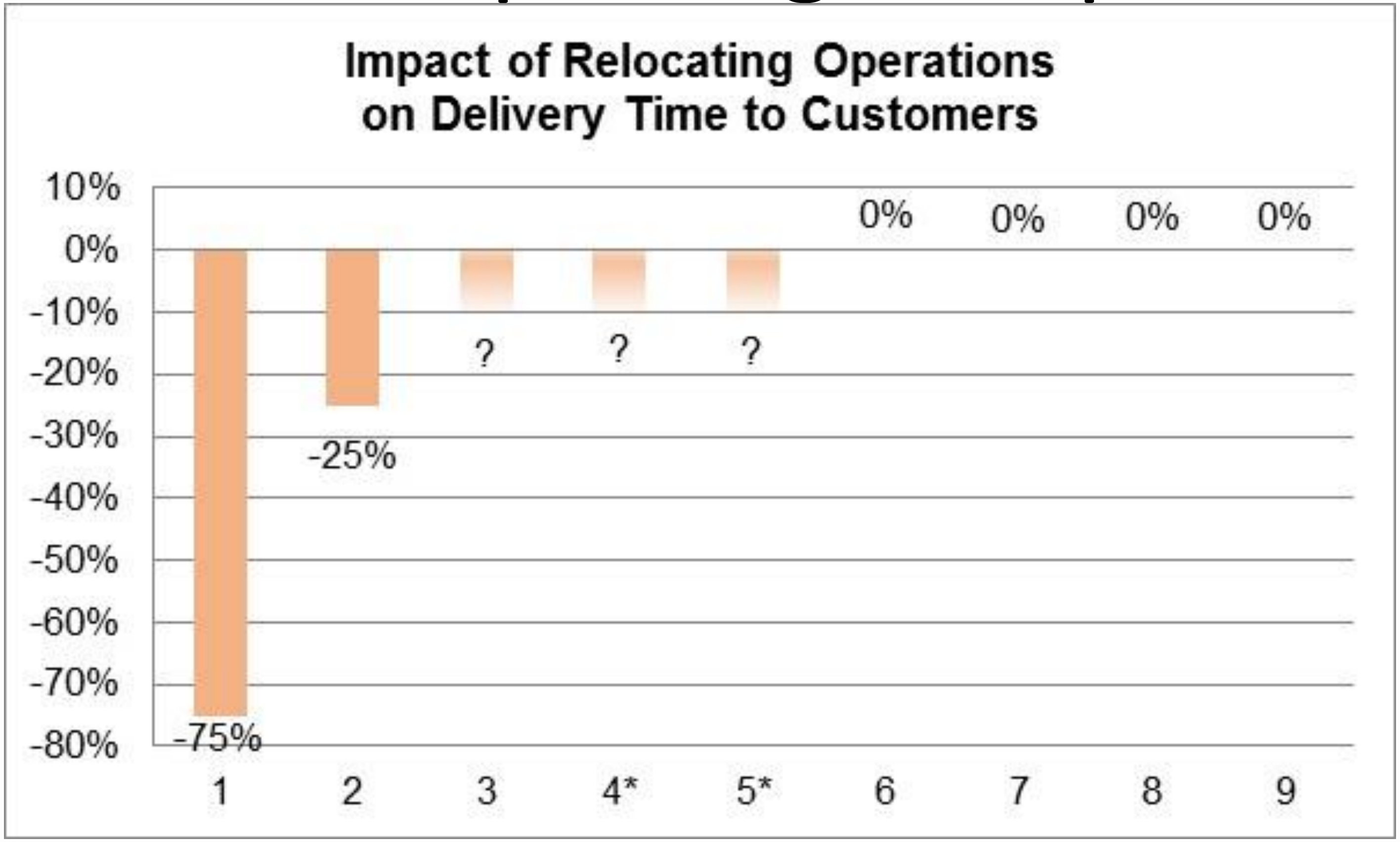
# Delivery Time was Reduced for Over Half of Reporting Companies

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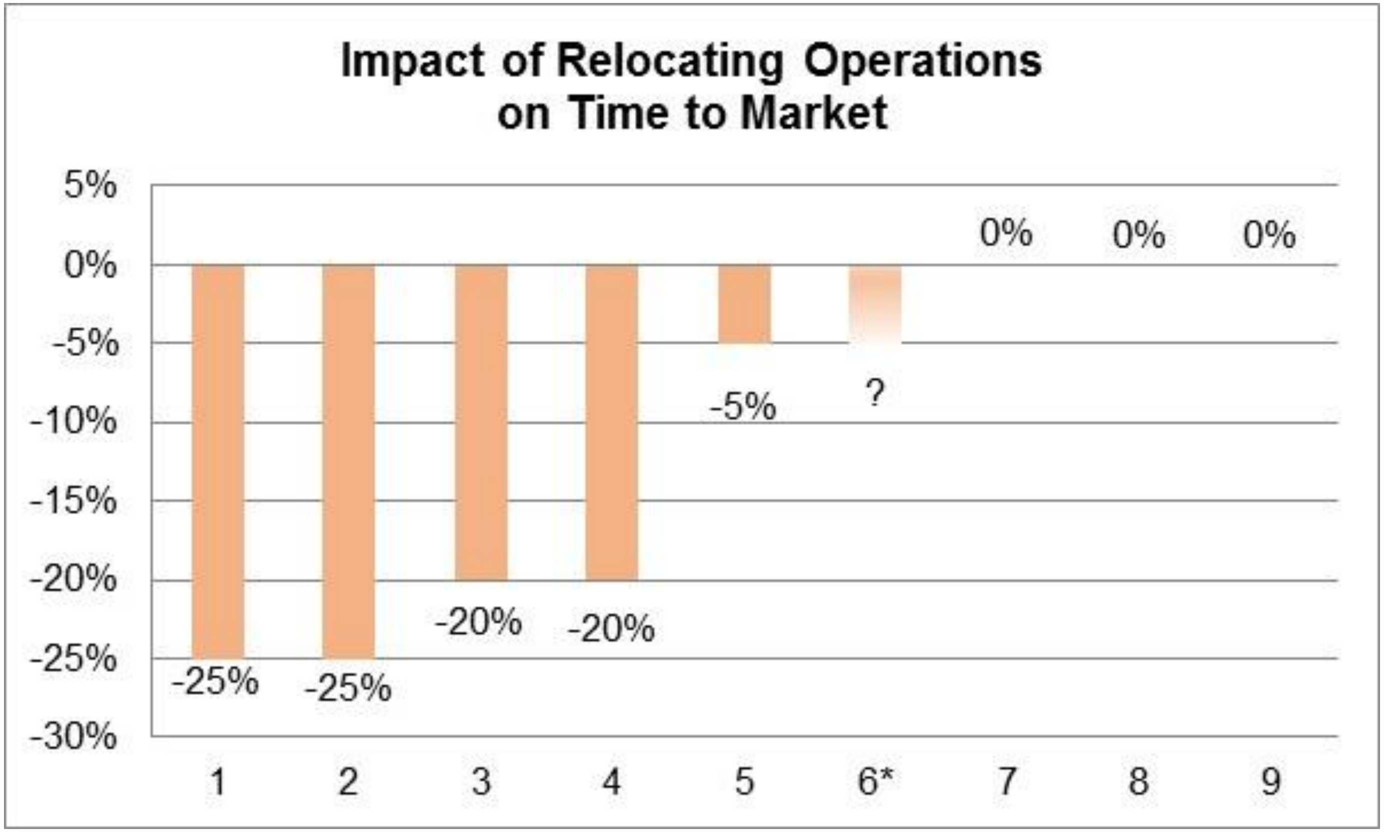
# Time to Market Shortened for 2/3 of Reporting Companies

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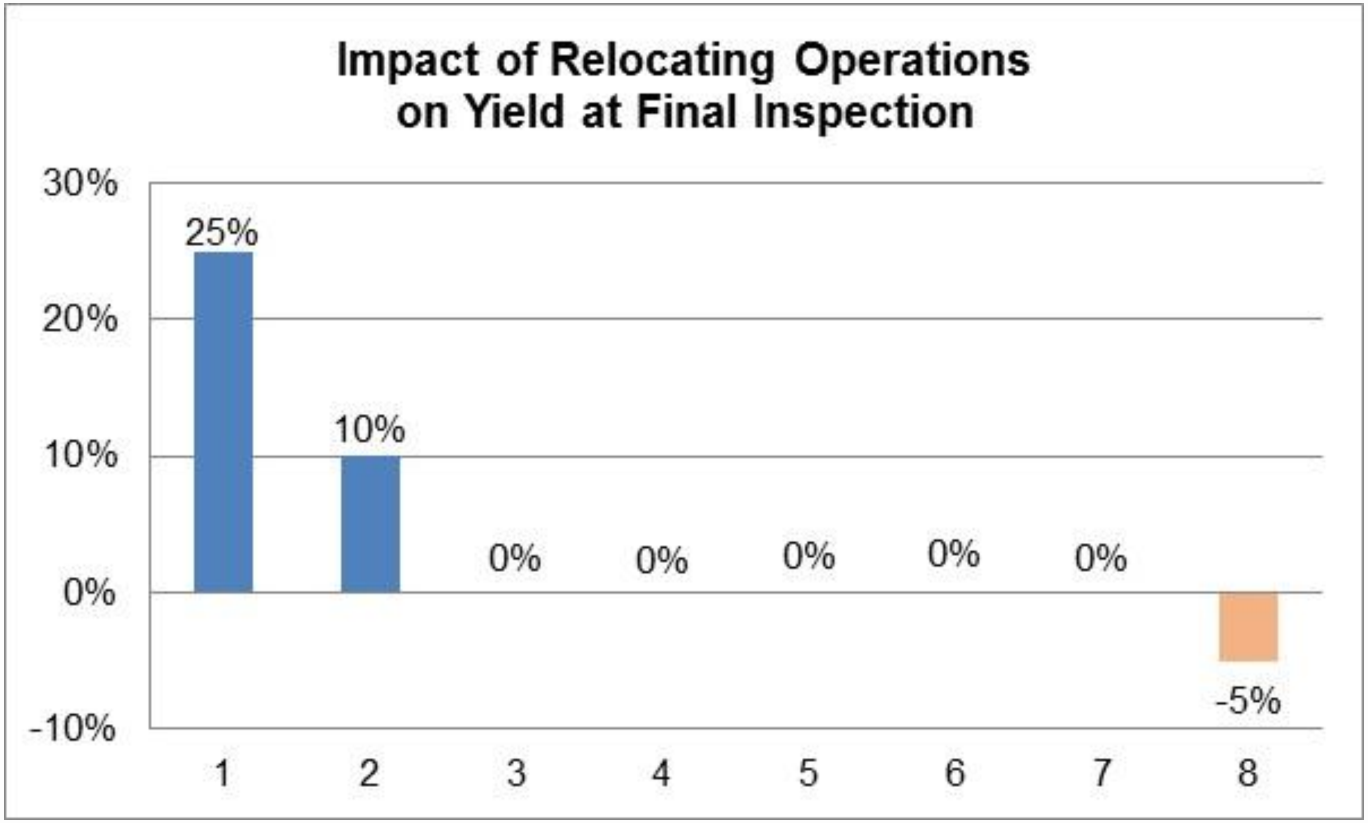
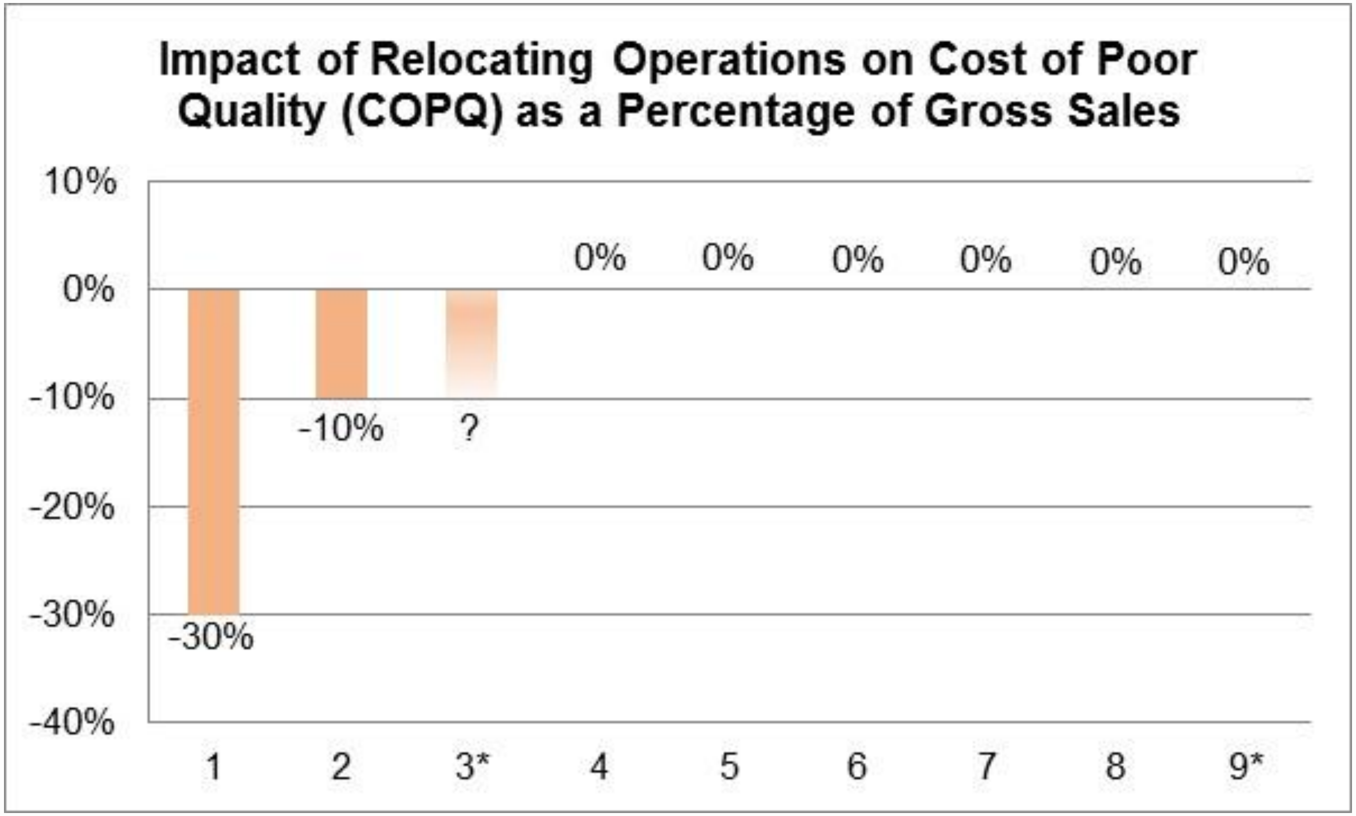
# Production Yield Increased for Some Reporting Companies



# COPQ Was Reduced for 1/3 of Reporting Companies

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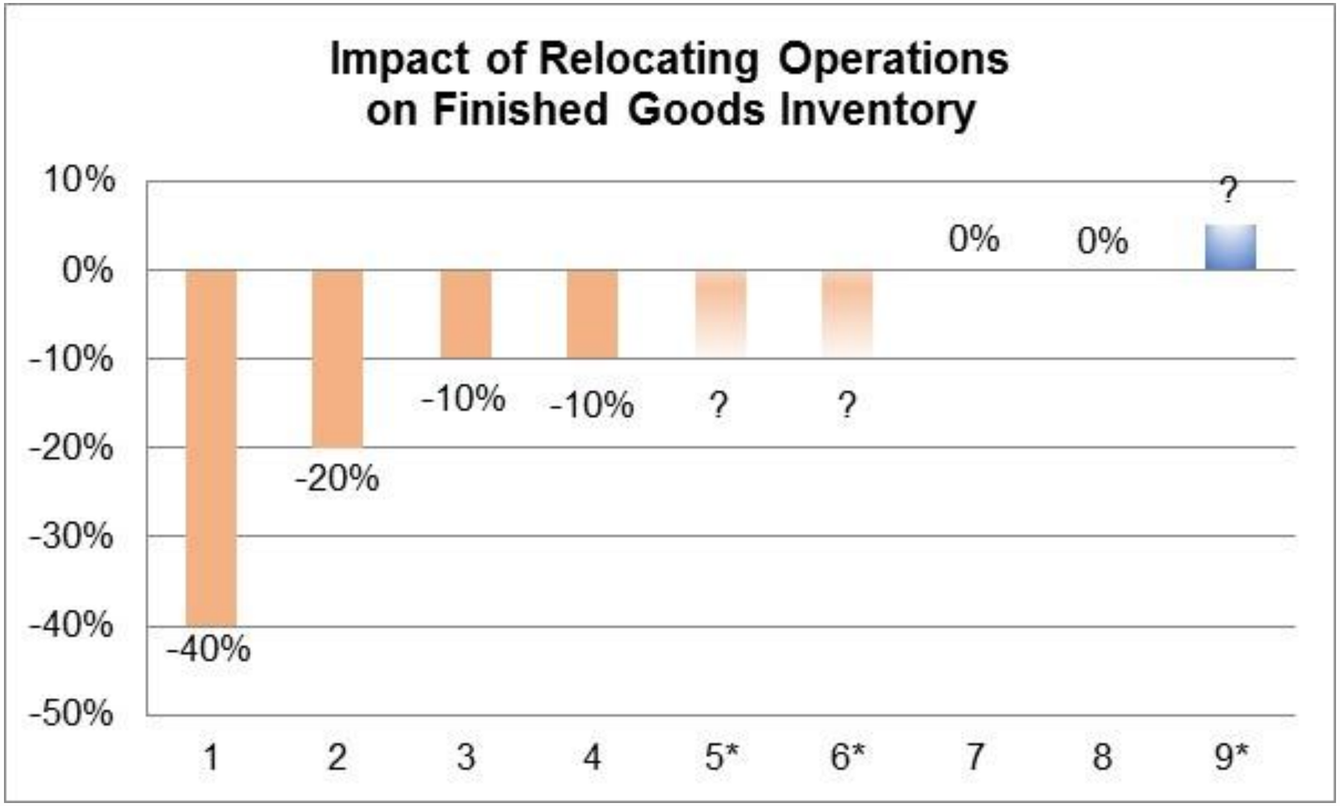
# Finished Goods Inventories Shrunk for 2/3 of Reporting Companies

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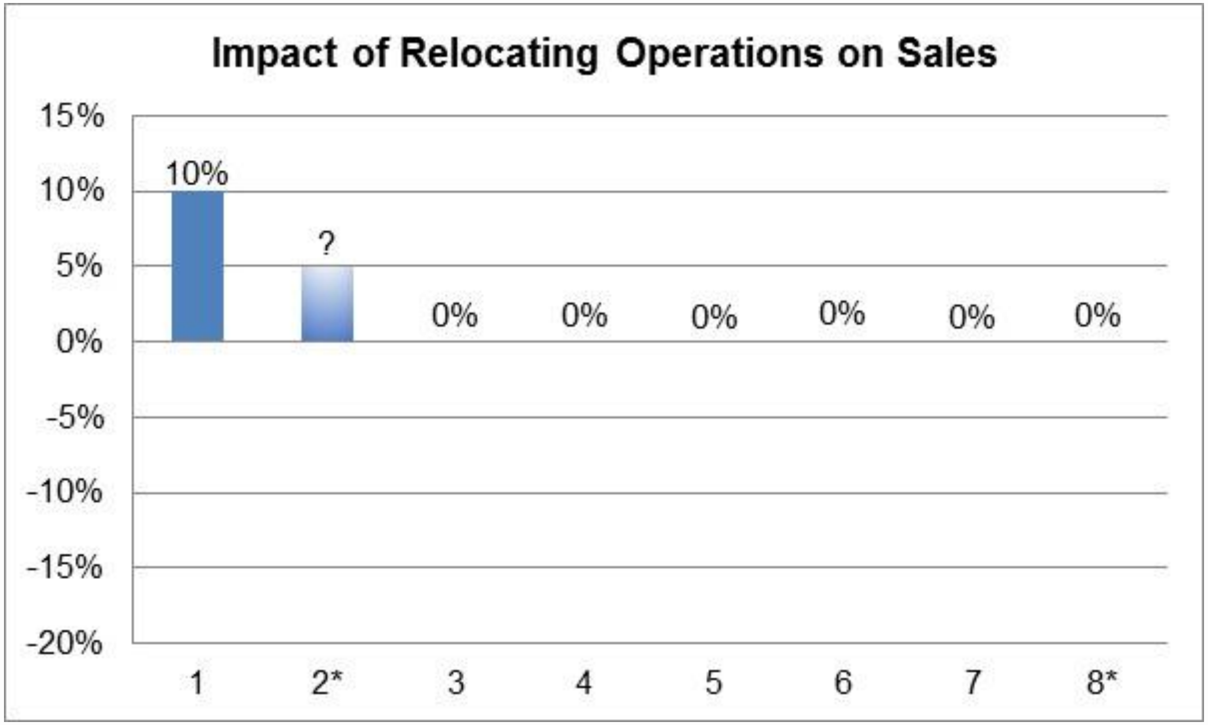
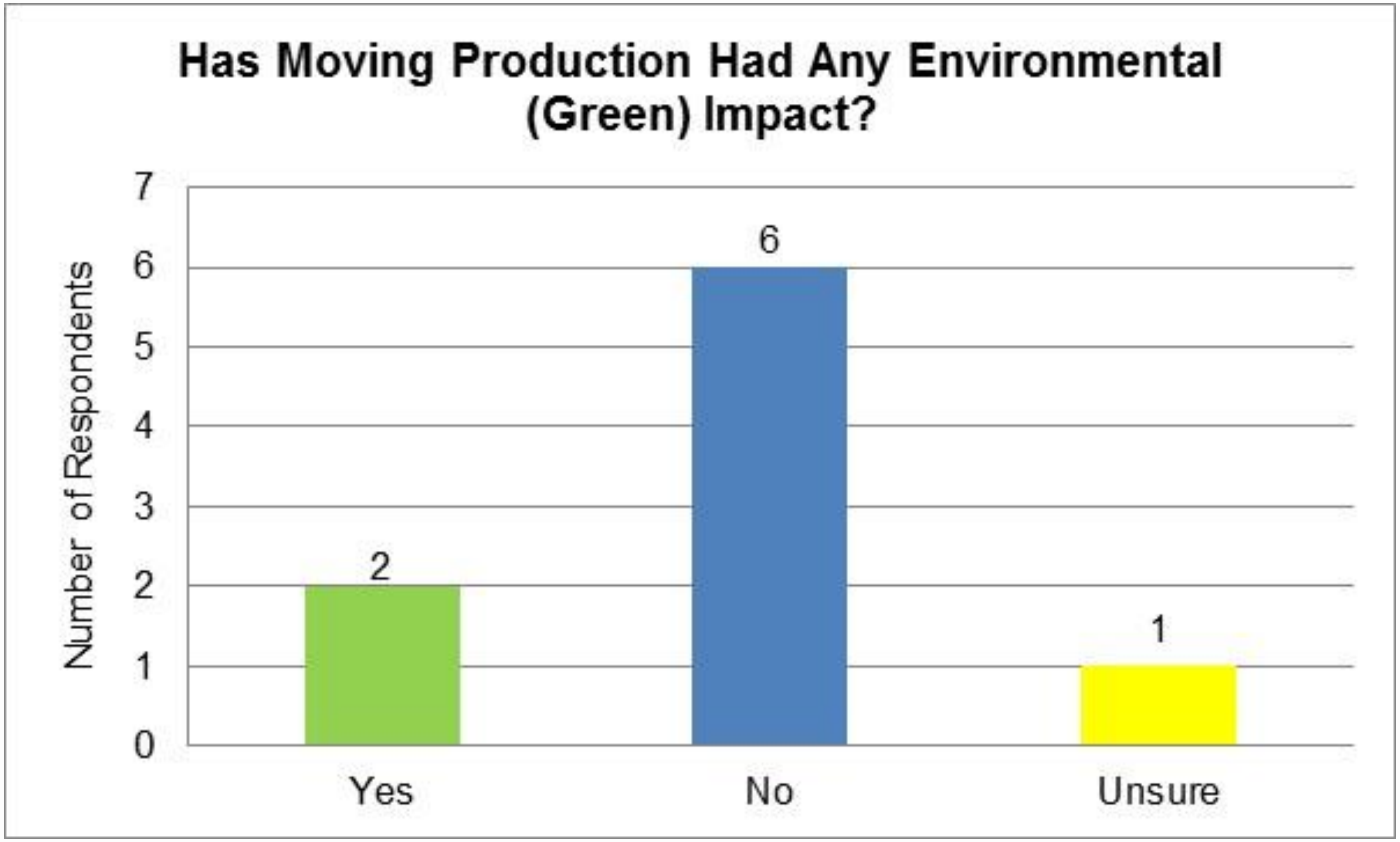
# Some Said On-Shoring Made Them More Competitive at Winning Orders or New Customers

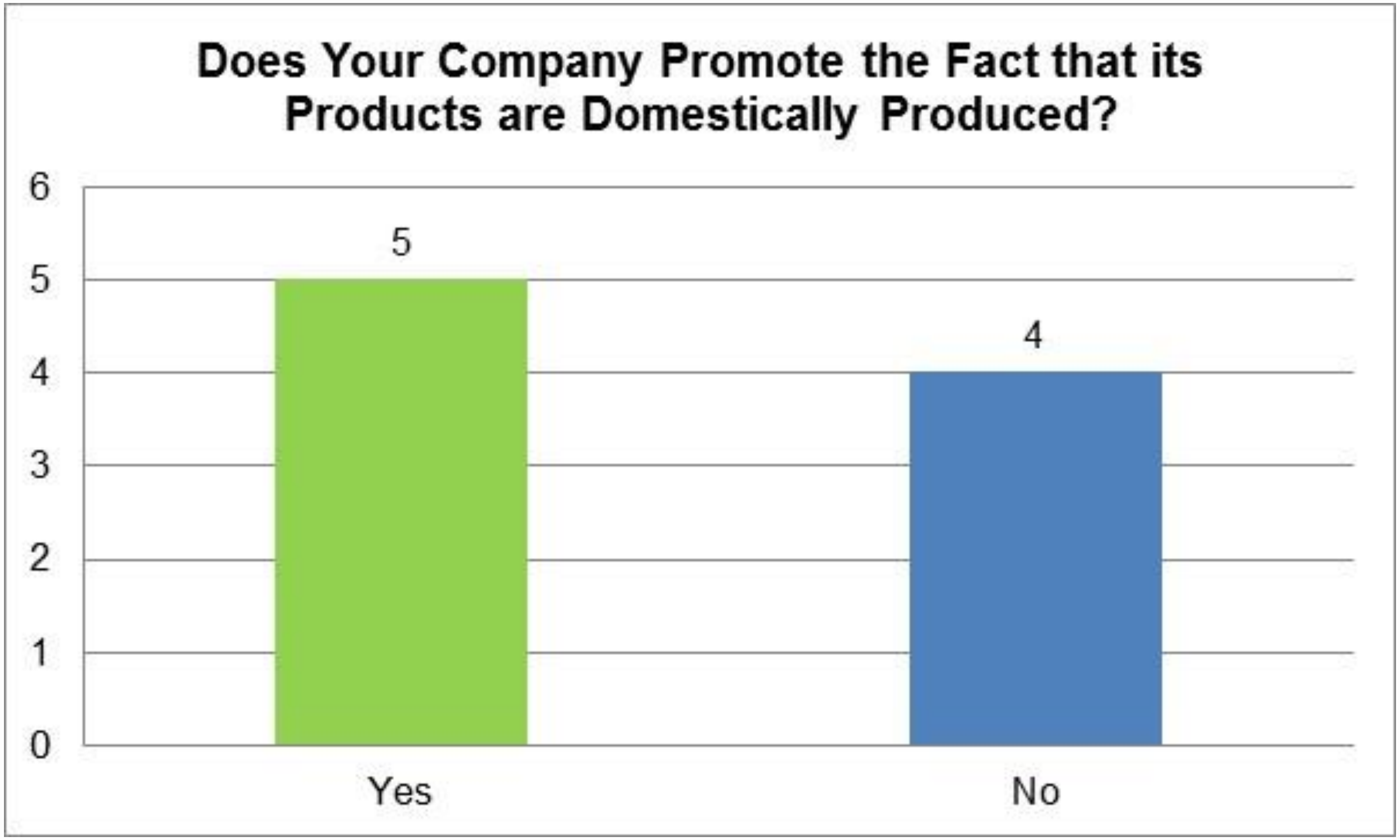



*Could not quantify

# No Green Impact Reported by Most Companies



# Over Half of Reporting Companies Promote Domestic Production



# Other On-Shoring Impacts Reported

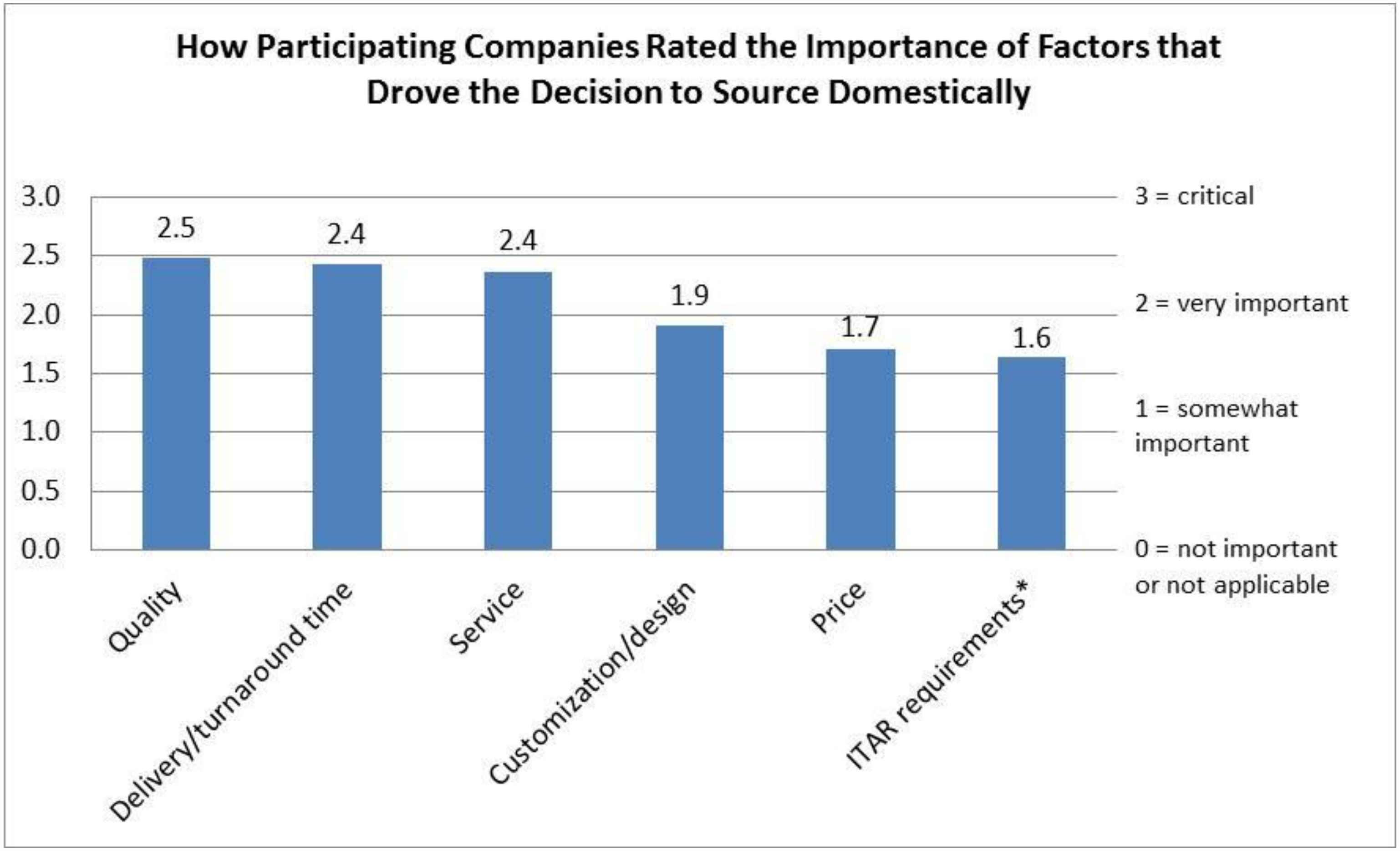
- “Recent acquisition. Overhead is expected to reduce. Expect to win box-build portion of the business.” (North American EMS company)
- “Procurement centralized in USA, easier now for suppliers, dropped some staff.” (North American EMS company)
- “Save on import tax: 5% when importing from China, 0% when made in eastern Europe which balanced the 5% extra cost.” (European OEM)

# Sourcing Trends

# Domestic Sourcing Trends

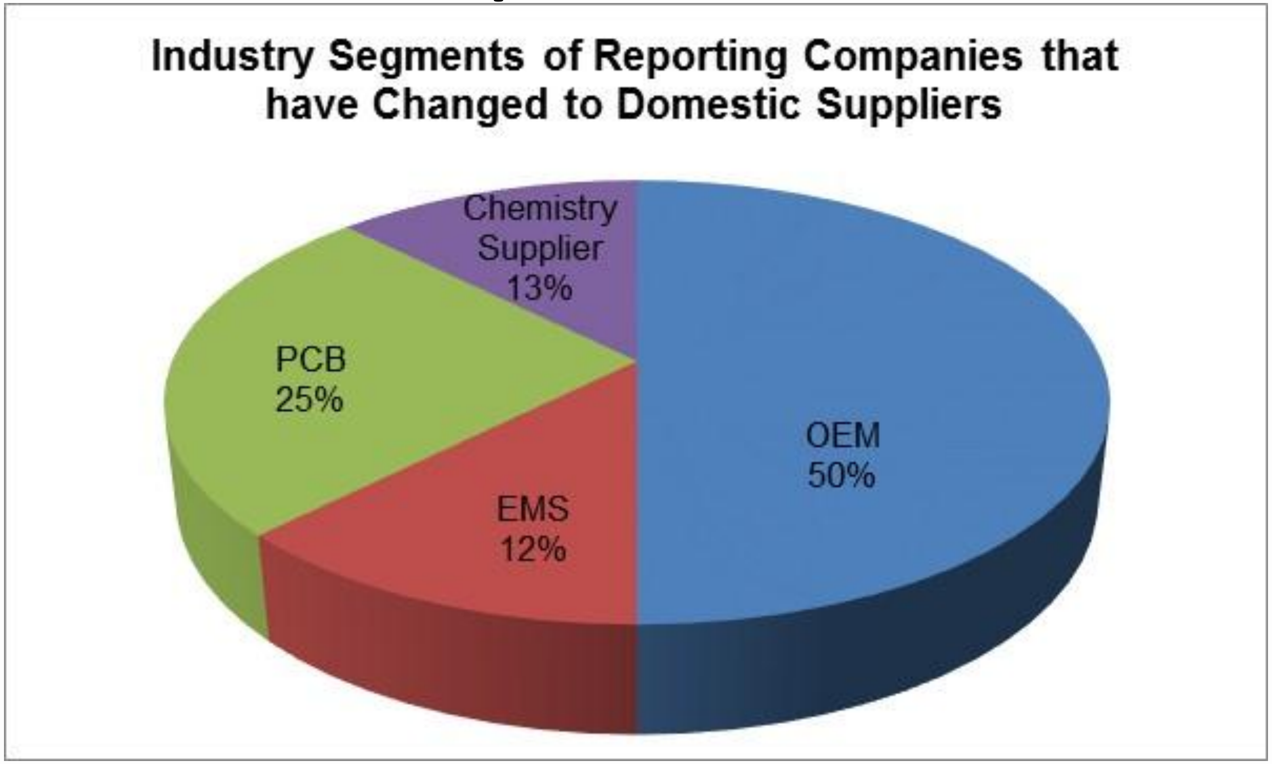
- Nearly half of respondents to the 2012 survey reported changing at least one supplier in 2011-2012 from an international to a domestic supplier.
- More than half have company policies to promote greater use of domestic suppliers.
- Products they are now sourcing domestically include PCBs, process consumables, solder, laminate, components and assembly services (EMS).

# Drivers of Domestic Sourcing



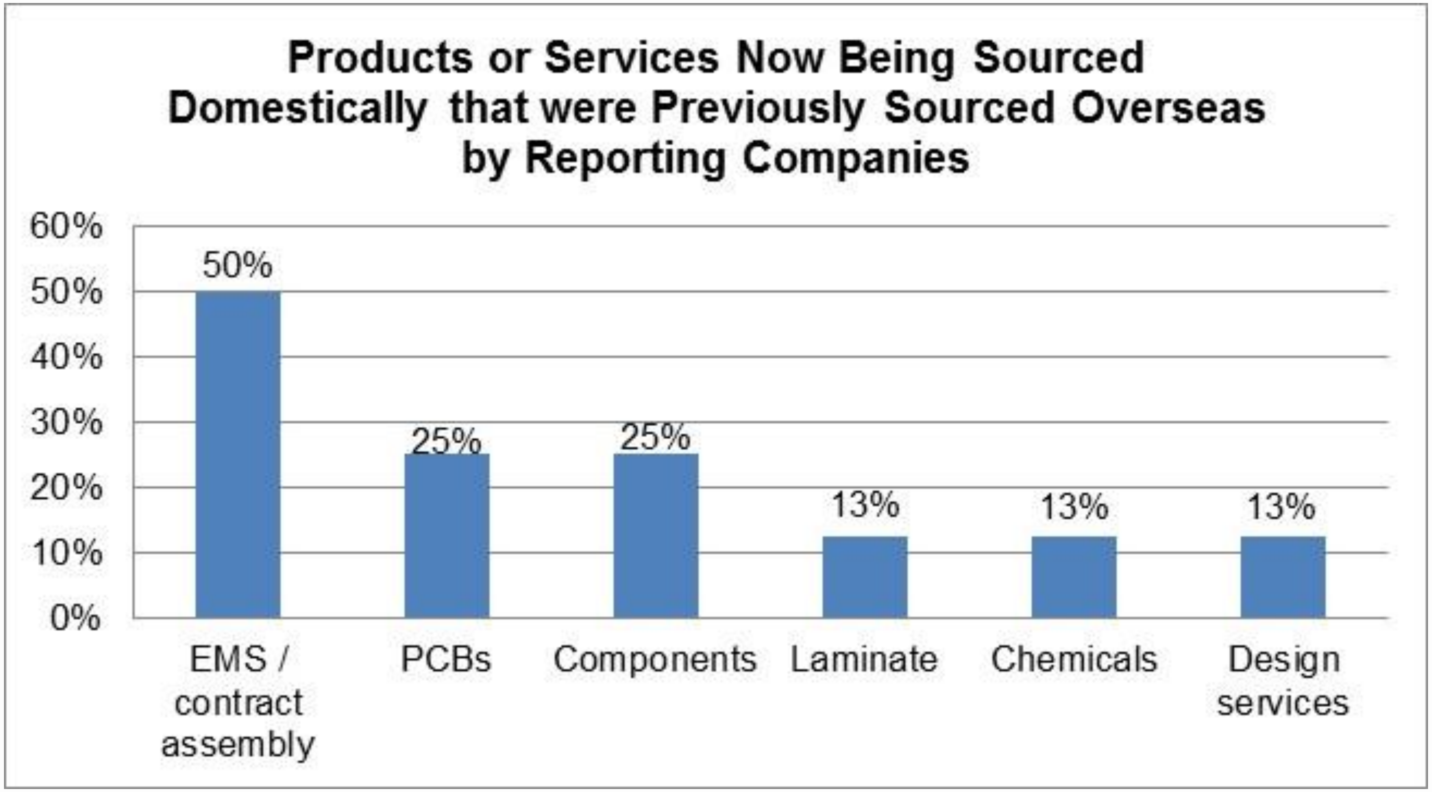

* Most respondents rated ITAR requirements as either critical (3) or not important (0), based on whether or not they serve the U.S. military market.

# Domestic Sourcing by 2014 Survey Respondents



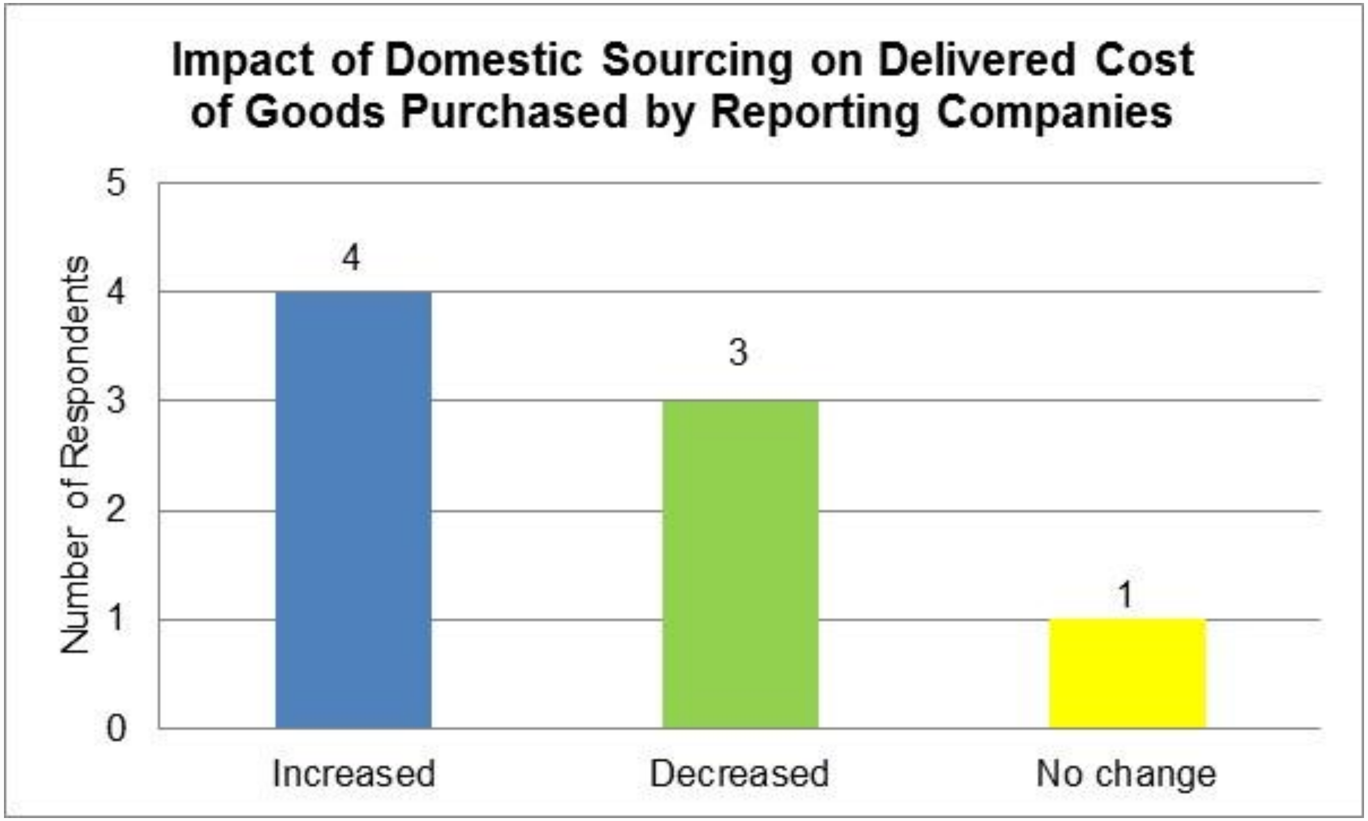

Percentages may not be representative of the industry in total.
Companies reporting changes to domestic sourcing spanned the gamut of companies sizes, from less than $10 million in annual sales to more than $1 billion.

# Domestic Sourcing by 2014 Survey Respondents



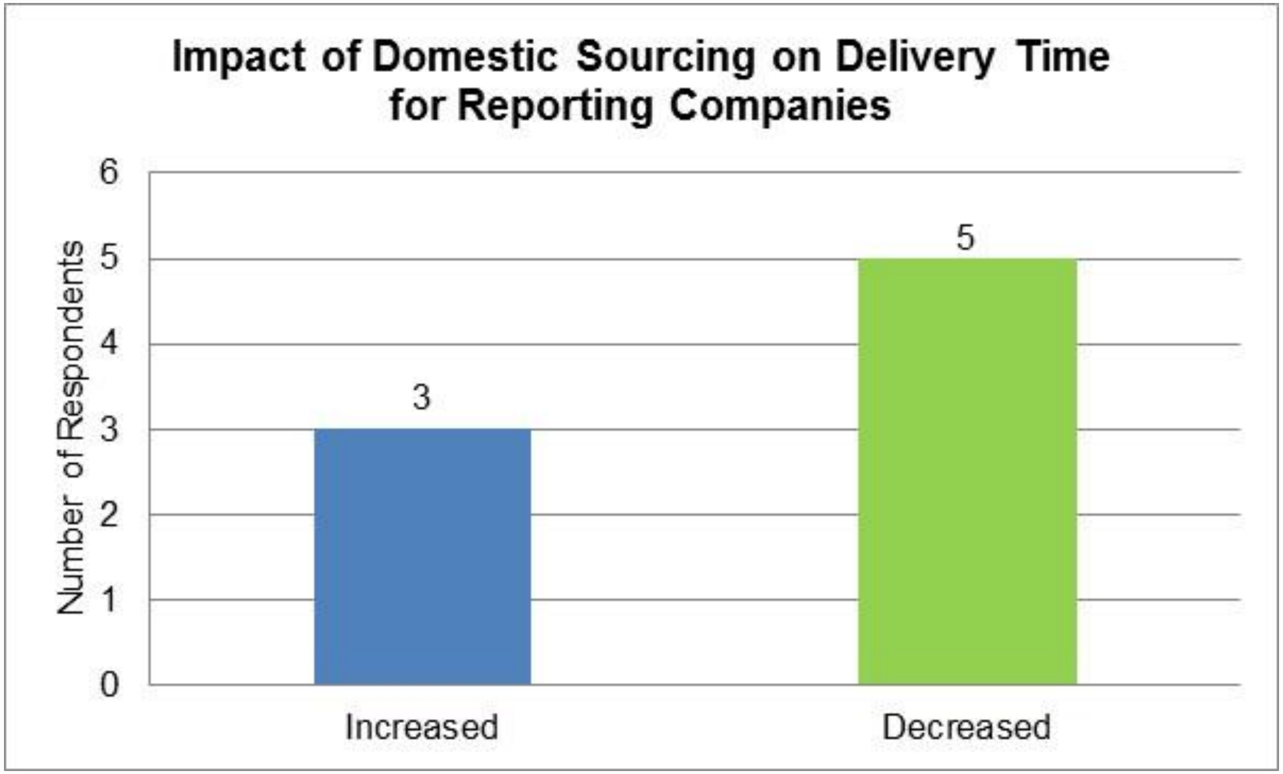

This data reflects the industry segments of the reporting companies and may not be representative of the industry.

# Delivered Cost Increased for Half of Respondents, but Decreased for Some

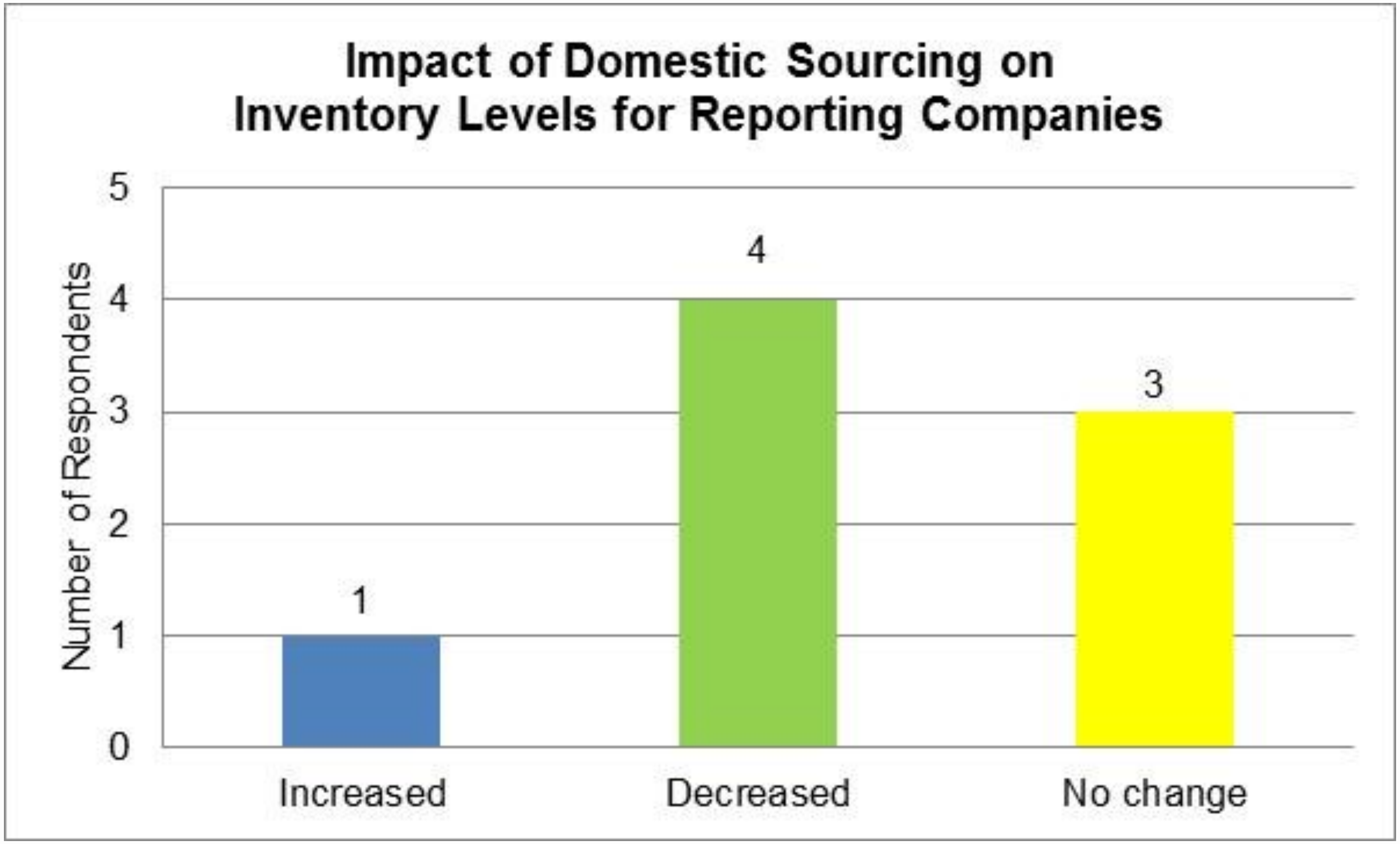



Increases varied widely. Decreases averaged 5%.

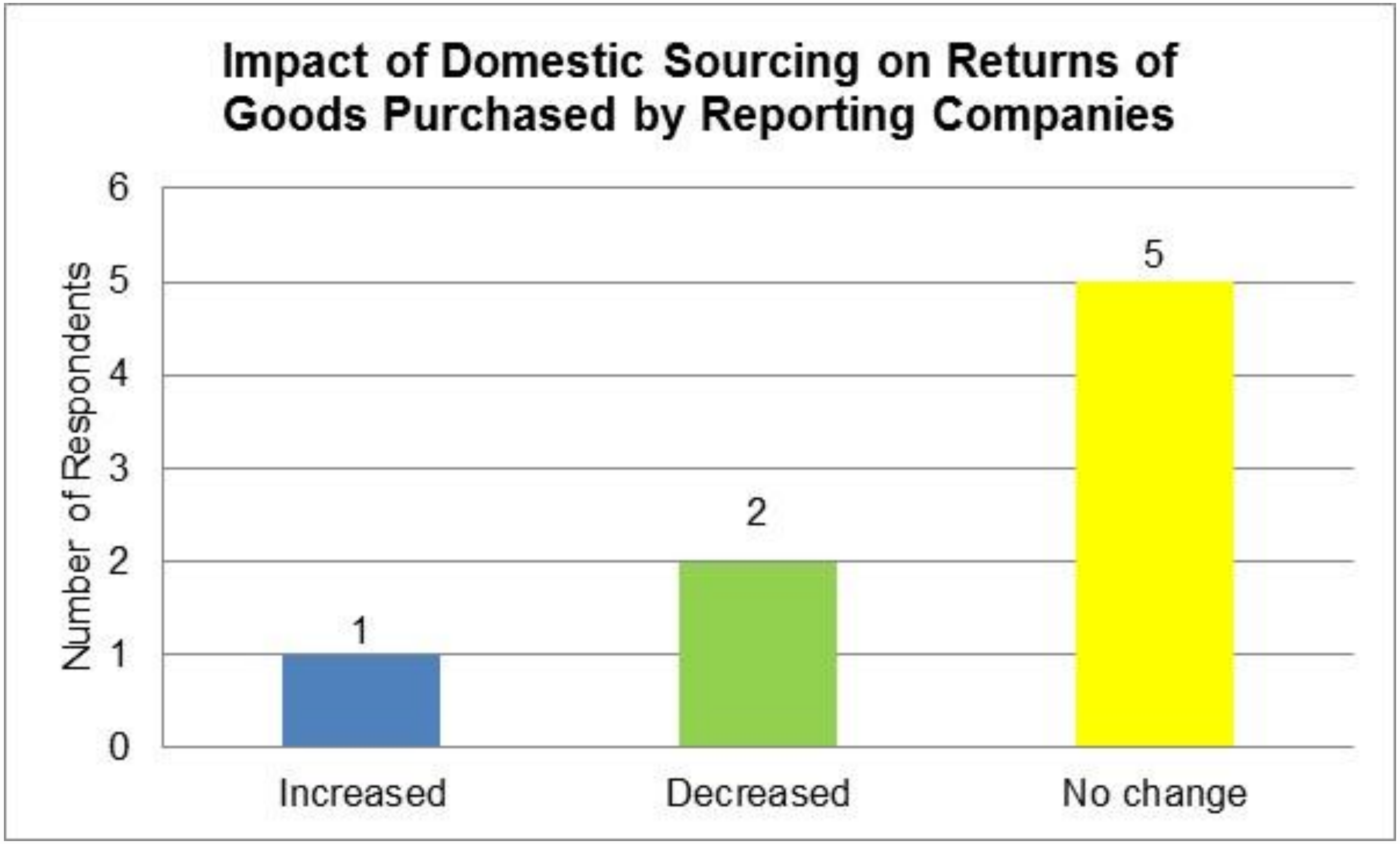
# Delivery Time Decreased for Most Responding Companies, but Increased for Others



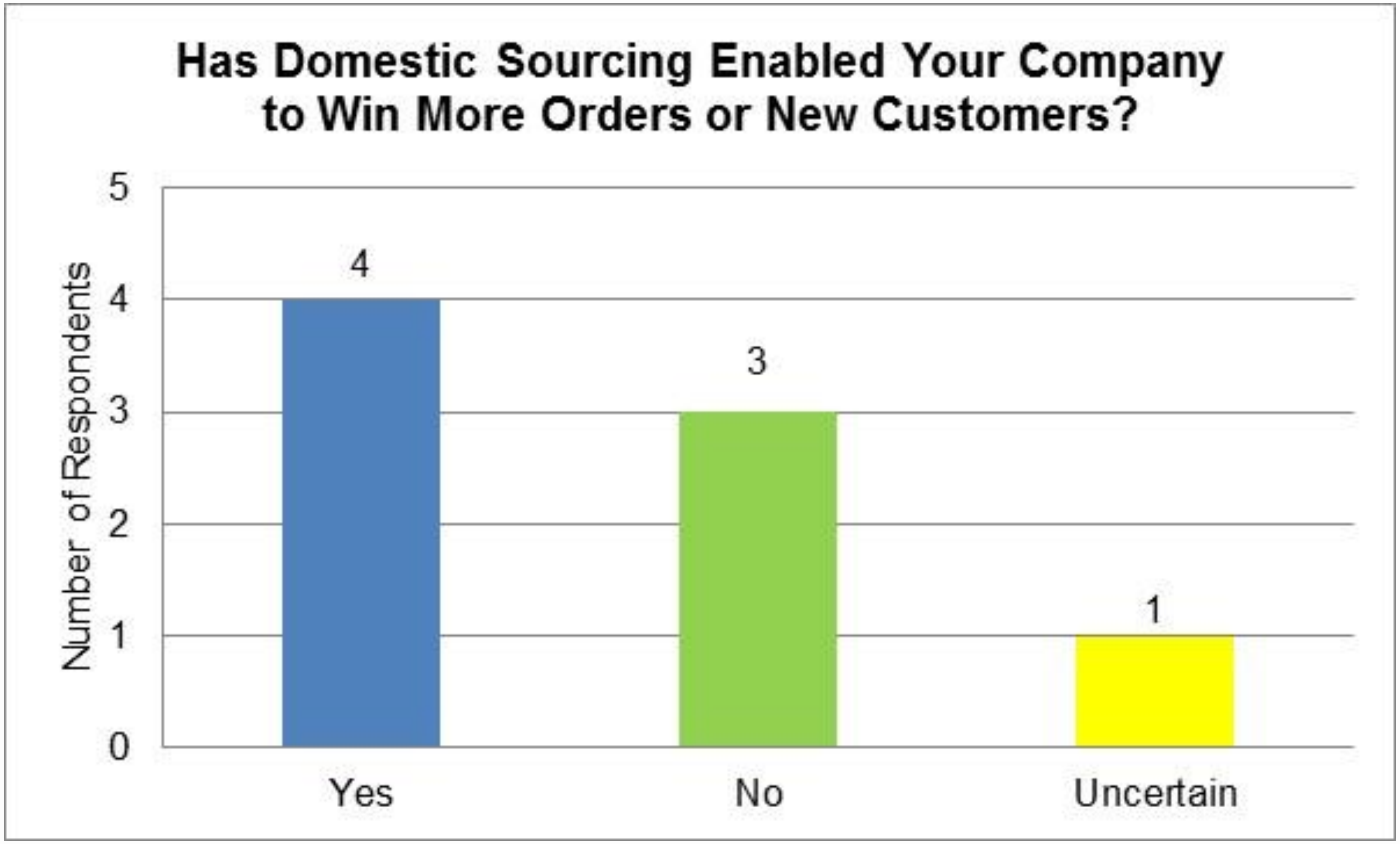
# Half Reported Lower Inventory Levels Due to Domestic Sourcing



# Most Respondents Saw No Impact on Returns



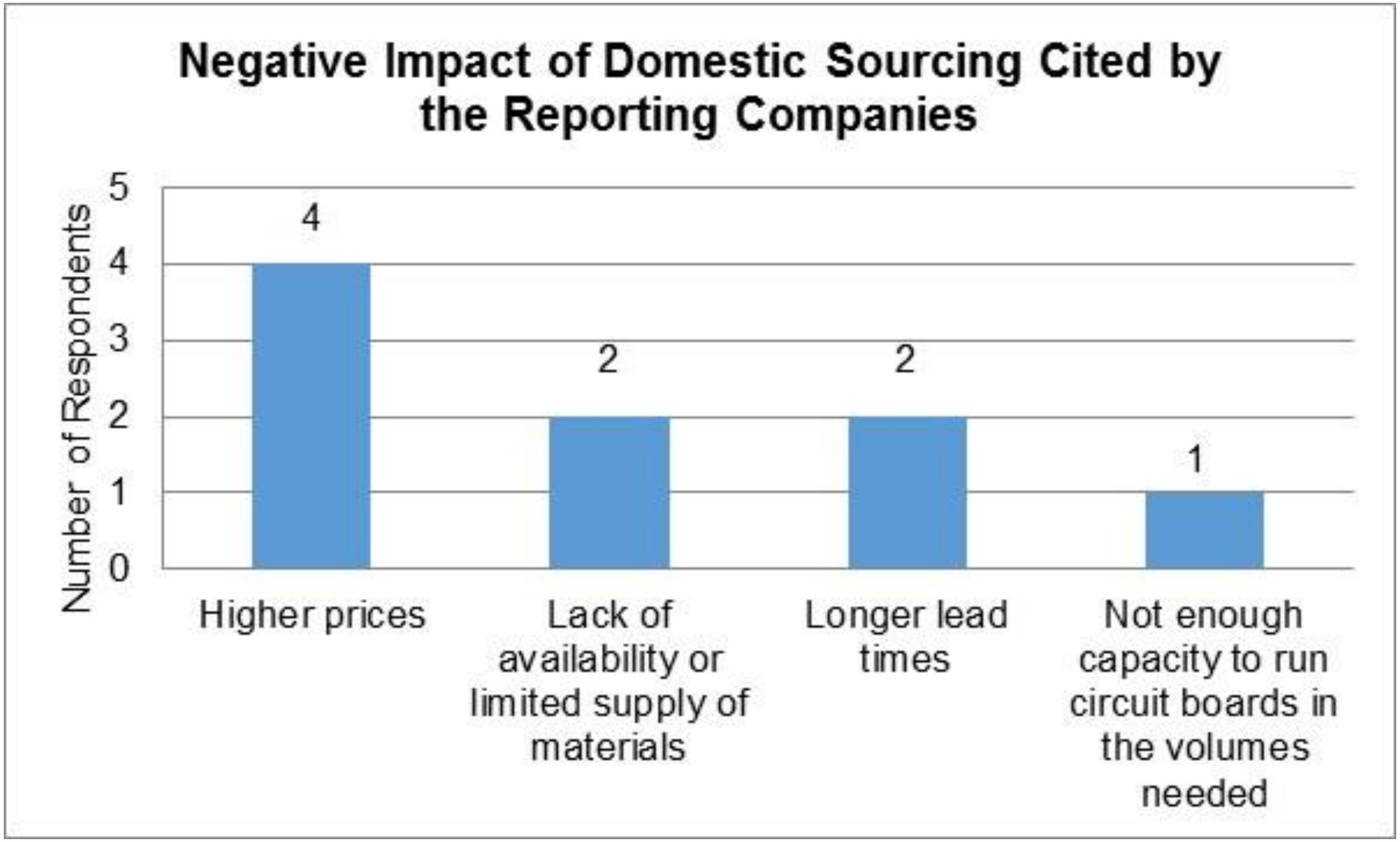
# Domestic Sourcing Increased Sales for Half of Respondents



# Other Benefits of Domestic Sourcing Cited by Respondents

- Half said they are now able to order smaller lot runs as a result of changing to a domestic supplier
- "Mitigation from Asia regional instability"
- "More flexibility in schedule of build and lead times"

# Negative Impacts of Domestic Sourcing



# Other Negative Impacts of Domestic Sourcing Cited by Respondents

- Asked about availability of key production inputs, some respondents cited HDI/microvia boards as being in short supply in North America.
- "Not many (suppliers) are prepared for even 25% of the off-shore work coming back." (North American PCB fabricator)

# The Current Thinking about On-Shoring

# Participants' Observations

- "A thoughtful study will reveal that not everything can be made overseas nor can everything be made in the US. Each project needs to be studied – value add content, complexity, flexibility, IP protection issues, ease of management of the supply chain, proximity to design centers, traditional weight-value ratios, etc."

# Participants' Observations

- "Recently our company has been looking to keep the majority of the manufacturing outsourced with in the USA. We use local suppliers when possible. The major drivers for off shore are large volume products that can be sourced at a minimal cost."
- "We are moving more outside of the US to be closer to our main market. Labor costs are not the main driver - being close to our customer is the main driver."

# Participants' Observations

- "(Our Mexico plant was) a sales advantage. Customers "think" it is an advantage even though it costs more than running USA plant due to quality deltas."
- "We are here because many of our major customers are here. It is also where we were born, and have a strong desire to help our country prosper."

# Regional Strategy Resources

- *On-Shoring in the Electronics Industry: Trends and Outlook for North America*
  - Original IPC study published August 2012
  - 2013 Update published September 2013
- Coming in April 2014:
  - New IPC report on business impact of on-shoring
  - *Where in the World? A Regional Strategy Roadmap for Electronics Manufacturers*
- Re-Shoring Initiative, www.reshorenow.org

# Questions?

# Thank You!

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