Session IV: Peer Share
Lean Manufacturing Cost Levers

Opportunities for bringing manufacturing back to the U.S.

Maureen Hart

Definition – Leaning manufacturing

- Planned elimination of waste,
- The continuous improvement of productivity,
- Ongoing focus on customer value

- Summary: Elimination of waste

Resource-wasting activities may occur at any point in a manufacturing or distribution process:

- in design,
- production,
- supplier management,
- order handling,
- distribution or customer service.

Focus: Reduce waste

- Lean uses a number of structured problem solving skills or tools: technical, organizational, interpersonal, analytical.
- Includes reuse or recyclability in design
- Wal-Mart affect: Reduce container size, energy efficiency in stores, cross-docking eliminating warehouses, and more.

Lean sourcing vs Globalization

JIT: Just In Time inventory means the elimination of waste in storage of materials and in the final part or product.

- Materials before production
- Product or part after production

JIT – Just in Time Inventory

Local / Regional

- *easier if it is close,*
- *reduces risk,*
- *minimal lead times*
- Minimize or eliminate obsolete inventory

Overseas

- *has a long lead time*
- Larger inventory -
- Floating inventory –
- Safety inventory
- = higher costs

Cost Levers

- Traditional cost levers for moving manufacturing to Low Cost Countries (LCC)

- Labor
- Infrastructure costs
- ------Now there are others such as inventory

Local vs Global Supplier Interaction

- Frequent
- Close proximity

- Rare
- Distant geography
- 3rd party
- Travel costs are high

Quality Resolution

- Direct-joint problem solving

- Indirect – conference calls and e-mail
- Work through 3rd party

Note: Another type of waste – discards, rejects, defects.

Supply Chain Complexity

- Relatively simple
- More complex

Flexibility

- Fast –
- Minimal pipeline inventory

- Slow –
- significant pipeline inventory
- Higher risk for obsolete inventory

Landed cost analysis

- Global Transportation – multiple legs and costs
  - Supplier to export dock
  - Ocean freight to import
  - Custom costs and delays
  - Expedited air
  - Domestic transport

Risk

- A real or potential disruption to the flow of product or service from its origin to the point of consumption.
- A more complex supply chain requires greater risk assessment.

Some Risk Factors

- Quality production capability
- Bottlenecks - congested ports
- Cost driver volatility (labor, energy)
- Natural disasters …..
- Terrorism and instability
- And then

Cargo ship Cougar Ace tips over, 4,700 Mazdas aboard

By Alex NunezRSS feed

Photo: United States Coast Guard

Risk – Damage or loss increases with multiple touches

Peerless AV Aurora, Illinois, Brackets

Sourcing requires information sharing

Unenforceable or ignored copyrights and patents

- Peerless AV became a Boomerang company– Protecting intellectual property
  - Invested 20 million in new plant - very automated but still added jobs
  - Shipping costs rising
  - Expensive to maintain staff in two countries,

Evaluation with cost levels - example

- So you have LCC primary savings (10-35%, average 19% is from low labor and infrastructure costs.)
- After evaluating all these costs – it could be reduced to 4-6% difference.
- how could we make up that amount? How can we make worth your while to come back,…to California.

Macro Forces Impacting Global Sourcing

- Labor rate increases overseas
- Declining domestic wages and benefits
- Volatility of key cost drivers – labor, energy
- Increased complexity and risk

Low Cost County

Product Costs

- Increased Supply Chain Costs
- Increased overhead costs
- Increase Transportation Costs
- Increased Inventory Investments
- Duty cost

es such as 3D printing, easy-to-use ... manufacturing services available online. The wheel is almost coming full circle, turning away from mass manufacturing and towards much more individualised production. And that in turn could bring some of the jobs back to rich countries that long ago lost them to the emerging world. ■

Factories and jobs

Back to making stuff

Manufacturing still matters, but the jobs are changing

FOR OVER 100 YEARS America was the world's leading manufacturer, but now it is neck-and-neck with China (see chart 1, next page). In the decade to 2010 the number of manufacturing jobs in America fell by about a third. The rise of outsourcing and offshoring and the growth of sophisticated supply chains has enabled companies the world over to use China, India and other lower-wage countries as workshops. Prompted by the global financial crisis, some Western ...

Domestic Trend: Closer to Home

- Boomerang: Bring their manufacturing back to the states.
- Multi-shore: to minimize risk, manufacturing in multiple countries or continents
- China plus 1: has one manufacturing facility close to corporate and American markets

Chesapeake Bay Candle

- Rising labor costs – Rising shipping cost
- Highly automated factory near corporate base in Maryland
- R&D close to manufacturing - respond to new trends fast
- China plus one (kept plant in China for Asian market)

Questions? Comments?