The U.S. Manufacturing Environment
The more we change, the more we stay the same....
Today’s World

- **U.S. Agriculture**
  - 2.2 million farms
  - 834,000 people working in agriculture

- **Farmville**
  - 110 million installs
  - 32 million daily players
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Our world is changing at breath-taking speed, ....how does this impact the manufacturing sector?
State of U.S. Manufacturing

Some years ago, an émigré Russian engineer, offered an observation about his adopted country: “America seems very rich,” he said, “but I never see anyone actually making anything.” …. 

-- NY Time Op-Ed, Paul Krugman, May 2011
Share of Global Manufacturing Output

Source: United Nations Statistics Division
Analysts who argue that manufacturing is in decline are really referring to long-term decline in manufacturing employment. Manufacturing output has remained constant due to productivity gains of 2% per year.

Source: Bureau of Economic Analysis, Bureau of Labor & Statistics, Federal Reserve
The 3 largest segments are also the fastest growing; these segments also account for 18% of all ton-miles hauled in the US.

Source: Bureau of Economic Analysis, Bureau of Transportation Statistics Commodity Flow Survey
Transportation Equipment: 
*Proximity to Customers*

**BMW**  
Greer, South Carolina

**Hyundai**, Alabama  
Opened 2003

**Volkswagen**  
Chattanooga, TN  
2011
# U.S Automotive Production

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>Share of Annual U.S. Production</th>
<th>Share of Manufacturer's Global Production Volume</th>
<th>2011 YTD (Jan-Sept)</th>
<th>Share of Annual U.S. Production</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Motors</td>
<td>1,719,541</td>
<td>22.6%</td>
<td>20.3%</td>
<td>1,437,140</td>
<td>23.5%</td>
</tr>
<tr>
<td>Ford</td>
<td>1,660,921</td>
<td>21.8%</td>
<td>33.8%</td>
<td>1,370,034</td>
<td>22.4%</td>
</tr>
<tr>
<td>Chrysler</td>
<td>838,497</td>
<td>11.0%</td>
<td>53.4%</td>
<td>776,533</td>
<td>12.7%</td>
</tr>
<tr>
<td><strong>Big 3 Total</strong></td>
<td>4,218,959</td>
<td>55.4%</td>
<td>28.2%</td>
<td>3,583,707</td>
<td>56.5%</td>
</tr>
<tr>
<td><strong>Foreign</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMW</td>
<td>159,331</td>
<td>2.1%</td>
<td>10.8%</td>
<td>203,340</td>
<td>3.3%</td>
</tr>
<tr>
<td>Daimler AG</td>
<td>126,301</td>
<td>1.7%</td>
<td>9.3%</td>
<td>106,523</td>
<td>1.7%</td>
</tr>
<tr>
<td>Fuji (Subaru)</td>
<td>158,022</td>
<td>2.1%</td>
<td>26.5%</td>
<td>167,510</td>
<td>2.7%</td>
</tr>
<tr>
<td>Honda</td>
<td>954,502</td>
<td>12.5%</td>
<td>26.6%</td>
<td>583,764</td>
<td>9.5%</td>
</tr>
<tr>
<td><strong>Foreign Total</strong></td>
<td>3,393,024</td>
<td>44.6%</td>
<td>12.5%</td>
<td>2,541,151</td>
<td>41.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7,611,983</td>
<td>64.6%</td>
<td>12.5%</td>
<td>6,124,858</td>
<td>41.5%</td>
</tr>
</tbody>
</table>

Notes: The US production numbers above represent 66% of what those companies manufacture in North America. Approximately ~4M vehicles are made in Canada and Mexico which are imported to the US. For 2011 US sales are estimated to be 12.5M.

Sources: Organisation Internationale des Constructeurs d’Automobiles (OICA), Wards Auto Group
Food Processing:  *Proximity to Inputs*
…Customers Demand More…
Pressures Down the Customer Chain

Better…Cheaper…Faster.
Business to Business Demands

• **Customers’ needs differ**
  – Heterogeneous products
  – High volume, smaller quantity shipments

• **Customers have more sources/pathways**
  – Lead-time competition
  – Commoditization
  – Pricing pressures
The Vicious Cycle of Pricing

1. **Pricing Pressures**
   - Lowest price wins
   - Manufacturers cut back on investments
   - Delivery of value declines
   - Brands are not differentiated
   - Customer buys mostly on price

2. **VICIOUS CYCLE**
   - Next round of competition
   - Prices & margins decline

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3 Ways to Capture Value

Help your customer.
- Gain Volume
- Get to a Higher Price Point
- Take Costs Out
## Innovations

<table>
<thead>
<tr>
<th>Help Customers-</th>
<th>Initiative</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take Costs Out</td>
<td>Inventory Management</td>
<td>Just-in-Sequenced (JIS) production for auto seats in 40 minute intervals.</td>
</tr>
<tr>
<td></td>
<td>Advanced Forecasting</td>
<td></td>
</tr>
<tr>
<td>Gain Volume</td>
<td>Engineered to Order</td>
<td>Customized electronic equipment delivered on-site for quick installation in telcom cell network</td>
</tr>
<tr>
<td></td>
<td>Project Management</td>
<td></td>
</tr>
<tr>
<td>Get to a Higher Price</td>
<td>Redesign Channel Role &amp; Responsibility</td>
<td>Website order triggers assembly of customized window screen that is drop shipped to homeowner.</td>
</tr>
</tbody>
</table>
The hyper-connected world....
Hyper-connectivity

Terms like “made in America” or “made in China” are phasing out. The proper term, is “made in the world.” More products are designed everywhere, made everywhere and sold everywhere.

-Pascal Lamy, Chief of the World Trade Organization
Cell Phone Supply Chain 2002

- Design & Engineering (Plantation, Florida)
- Manufacturing (Plantation, Florida)
- Assembly (Guadalajara, Mexico)
- Sub-Contracting (Singapore)
- Manufacturing (Tianjin, China)
- Sub-Contracting (Singapore)
- Distribution (Plantation, Florida)
- Software Programming (Plantation, Florida)
Smart Phone Supply Chain 2011

Design & Engineering
Manufacturing
Sub-Contracting
Assembly
Programming
Distribution

Manufacturing (Santa Clara, California)
Manufacturing (Woburn, Massachusetts)
Manufacturing (Nabern, Germany)
Manufacturing (Geneva, Switzerland)
Manufacturing (Seoul, S Korea)
Sub-Contracting (Taiwan)

Design/Engineering (Cupertino, California)
Software Programming (Cupertino, California)
Distribution (San Diego, California)

Assembly (Shenzhen, China)
What Is This List?

- Dawning
- Huawei
- Changchun
- ZTE
- CSR
- Tencent
- WuXi
- BYD
- MAD
- Hermes
What Is This List?

- Dawning (Supercomputers)
- Huawei (Telecommunications Equipment)
- Changchun (Chemicals)
- ZTE (Telecommunications Equipment)
- CSR (High-Speed Rail)
- Tencent (Gaming)
- WuXi (Pharmaceuticals)
- BYD (Batteries)
- MAD (Architecture and Design)
- Hermes (Fashion)

- These Chinese companies are featured among Fast Company’s “Fifty Most Innovative Companies in the World”.
  - Dawning’s Nebulae chip is the third fastest in the world.
  - BYD batteries power 40% of the world’s cell phones.
  - MAD designed Toronto’s Absolute Towers.
Huawei Timeline

• 1988: Huawei founded
• 1996: First non-China contract won in Hong Kong
• 2004: Non-China sales surpass China sales
• 2008: Orders top $23 billion, 75% outside China
• 2009: Named world’s top patent filer by WIPO
• 2009: Surpasses Alcatel Lucent and Nokia Siemens for #2 ranking in the world among telecommunications suppliers
An Innovation Opportunity for Global Corporations

- Develop or acquire “fast-follower” competencies which are prevalent in many Chinese firms
- Learn how to evolve leading-edge technologies to reach the larger middle markets of developing (and developed) economies
- Don’t be caught in the “first mouse trap” as new competitors from emerging markets reach western markets

Summary
Summary

• U.S. manufacturing output is not disappearing – it should remain constant.
• Healthy U.S. manufacturing segments are ones that are close to customers and to inputs.
• Manufacturers are constantly innovating to create value for their customers and take the spotlight off of pricing demands.
• For the U.S. manufacturer, the hyper-connected world has ushered in new opportunities, and new challenges.