Michigan Manufacturing: Driving Impact ... *Again*
Michigan’s Recovery

Since July 2009 trough:

- 176,500 nonfarm jobs added (8th in US)
- 87,900 mfg jobs added, which is:
  - Half of Michigan’s total job additions
  - 29% of US mfg job additions
- 29,200 direct auto jobs added (21% of US total)

In other words, manufacturing pulled 3.7 times its weight.

<table>
<thead>
<tr>
<th>Sector</th>
<th>% of MI Jobs</th>
<th>% of Jobs Added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>13.3%</td>
<td>49.8%</td>
</tr>
<tr>
<td>Rest of Economy</td>
<td>86.7%</td>
<td>50.2%</td>
</tr>
</tbody>
</table>
# Reference Data (000s of jobs)

<table>
<thead>
<tr>
<th>Employment</th>
<th>July 2009</th>
<th>July 2012</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>US nonfarm</td>
<td>130,164</td>
<td>133,204</td>
<td>2.3%</td>
</tr>
<tr>
<td>MI nonfarm</td>
<td>3,828</td>
<td>4,004</td>
<td>4.6%</td>
</tr>
<tr>
<td>US manufacturing</td>
<td>11,664</td>
<td>11,970</td>
<td>2.6%</td>
</tr>
<tr>
<td>MI manufacturing</td>
<td>444</td>
<td>532</td>
<td>19.8%</td>
</tr>
<tr>
<td>US auto mfg</td>
<td>652</td>
<td>788</td>
<td>20.9%</td>
</tr>
<tr>
<td>MI auto mfg</td>
<td>105</td>
<td>134</td>
<td>27.9%</td>
</tr>
</tbody>
</table>
Manufacturing’s Fuller Impact

Though just 13.3% of state employment, manufacturing makes up roughly half of the *traded* economy.

Most other service employment is in *non-traded* sectors, which do not bring non-Michigan income into the state.
Auto production is growing in Michigan ... and in Mexico. As a share of North American builds:

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan</td>
<td>13.3%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Mexico</td>
<td>17.3%</td>
<td>19.5%</td>
</tr>
<tr>
<td>Other NA</td>
<td>69.4%</td>
<td>64.5%</td>
</tr>
</tbody>
</table>
Threats: Economics & Policy

- Bipartisan fatigue with manufacturing
  - False dichotomy of “factories” versus “knowledge work”
  - Misperception of mfg as “old economy”
- Challenges from globalization / offshoring:
  - Not just less US and Michigan content, but ...
  - More vehicle and component design in Europe and Asia, & ...
  - Mounting competition from global companies willing to make investments that impatient US capital markets won’t permit
- Legacy of family ownership means too few MI mfrs really going for maximum share and profitability.
Imported Parts Reduce the Multiplier

A smaller multiplier means that manufacturing lifts fewer “boats” elsewhere in the domestic economy.
Why Manufacturing?

- States & regions don’t jump from success in Sector A to success in Sector B. They migrate from A to A’ to A”.
- New activity in startups, including university spinouts, heavily driven by federal funding. A few big successes, many failures, few jobs
- Unless new activity leads to in-region companies making new or improved products, little economic impact
- The point is not to extol manufacturing; it’s to help manufacturing GET BETTER to power a better economy.
- Despite a welcome increase in attention paid to manufacturing, no consensus on what to do. Three main camps, each of which has more and less valid arguments:
  1. Technology push (creative class): Advanced mfg / HPC / S&T / R&D
  2. 1950s nostalgia (Cheneyites): Deregulation / fossil fuel boom
  3. Oligopoly nostalgia (Labor): Protectionism to counter mercantilism
MEP Centers: a national network

59 MEP Centers
373 Locations
MMTC: a statewide network

- MMTC - Upper Peninsula: 300
- MMTC - Northern Lower: 550
- MMTC - West: 3300
- MMTC - Saginaw Valley/Northeast: 900
- MMTC - Southeast: 7330

12,378 manufacturing facilities
Our Mission

To enhance the global competitiveness of Michigan’s small and medium-sized manufacturers

Our Focus

Survivable manufacturers with 20-499 employees, with particular emphasis on those with 50-249 that want to grow
50-249-Emp. Mfrs Now Dominate

<table>
<thead>
<tr>
<th>Employment</th>
<th>Facilities (%)</th>
<th>Employees (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-49 in 2012</td>
<td>10,320 (82%)</td>
<td>109,000 (20%)</td>
</tr>
<tr>
<td><strong>50-249 in 2012</strong></td>
<td><strong>1,870 (15%)</strong></td>
<td><strong>237,000 (45%)</strong></td>
</tr>
<tr>
<td>250-499 in 2012</td>
<td>220 (2%)</td>
<td>90,000 (17%)</td>
</tr>
<tr>
<td>500+ in 2012</td>
<td>90 (1%)</td>
<td>96,000 (18%)</td>
</tr>
<tr>
<td>All (July 2012)</td>
<td>12,378 (2010)</td>
<td>532,000</td>
</tr>
<tr>
<td>1-49 in 1998</td>
<td>13,151 (82%)</td>
<td>149,000 (19%)</td>
</tr>
<tr>
<td><strong>50-249 in 1998</strong></td>
<td><strong>2,351 (15%)</strong></td>
<td><strong>269,000 (32%)</strong></td>
</tr>
<tr>
<td>250-499 in 1998</td>
<td>364 (2%)</td>
<td>129,000 (15%)</td>
</tr>
<tr>
<td>500+ in 1998</td>
<td>198 (1%)</td>
<td>282,000 (34%)</td>
</tr>
<tr>
<td>All (1998)</td>
<td>16,064</td>
<td>829,000</td>
</tr>
</tbody>
</table>
MMTC Areas of Expertise

- Leadership Evaluation
- Performance Benchmarking
- Operational Assessment
- Lean Business Solutions
- Quality Systems
- Green Manufacturing
- Six Sigma
- Solution Selling®
- Website Development
- Business Development
- Customer-Supplier Matchmaking
- Cost Identification and Quoting
Case study: Visioneering

Challenge: Get AS9100 certification to retain existing sales

- AS9100 prep training and mentoring
- Internal auditor training
- LEAN manufacturing

Result: 30% increase in revenue via retention of aerospace orders

Cari Spears and Kevin Reilly
Visioneering
115 employees
Case study: The Cardinal Group

Challenge: Developing new sales leads

- Market Diversification training

Result: 25% percent volume increase in new business

Tracy McCullough
The Cardinal Group
60 employees
Case study: Venchurs

Challenge: Communicating the long-term strategic growth plan throughout all levels of the company

- LEAN Kaizen
- Hoshin Kanri strategy deployment

Result: $6 million increased and retained sales, with $350,000 in costs saving/avoidance
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Documented Service Impact

Our State and federal sponsors measure the impact of the services we provide to Michigan manufacturers. MMTC clients are interviewed by an independent, third-party survey firm six months after project work is completed.
But Impact Uneven

- As with everything, the 80/20 rule applies: many with a little impact, a relative few with larger impact
- So we studied the few and found:
  - **Leadership** competency and sponsorship critical to achieving & sustaining success
  - Competent **management team** with competency across full range of business domains essential ... and relatively rare
  - **Employee engagement** critical to “discretionary effort” needed to take firms to next level
  - **Profitable growth** – not just hanging on – must be the explicit goal of engagements.
Our New Solution: “Leadership in Action”

- In development since 2010
- Ten pilots run 2010-11
- Intensive 2-day assessment:
  - Leader
  - Managers
  - Engagement survey of entire workforce
- Confidential reports for:
  - Leader
  - Management team
- Every domain rated green, yellow, or red
- 3-day Execs-only workshop
  - What best practice takes
  - A plan to attack every red and many yellows
MMTC LIA Conceptual Framework

Business Domain
- Green Resource Mgmt
- Process/CI
- Supplier Relations
- Products/Innovation
- Sales/Customers
- Workforce

Leadership Domain
- Leadership Personality
- Leadership Behaviors

External Forces
- Business Decisions

Organizational Performance
- Management Team Functioning
- Workforce Functioning

Management Business Competencies
**Competency Rated in Leadership & 27 Critical Business Areas**

<table>
<thead>
<tr>
<th>Strategic Direction &amp; Vision</th>
<th>Financials</th>
<th>Process / CI</th>
</tr>
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<tbody>
<tr>
<td>Strategic Plan</td>
<td>P &amp; L</td>
<td>Process Management</td>
</tr>
<tr>
<td>Business Plan</td>
<td>Quotation</td>
<td>Improvement Plan</td>
</tr>
<tr>
<td>Succession Plan</td>
<td>Asset Management</td>
<td>Quality Management</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Workforce</th>
<th>Sales</th>
<th>Product Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruitment &amp; Separation</td>
<td>Customer Management</td>
<td>Concept Development</td>
</tr>
<tr>
<td>Engage &amp; Reward</td>
<td>New Business Development</td>
<td>Product Development Engineering</td>
</tr>
<tr>
<td>Develop &amp; Advance</td>
<td>Sales Management</td>
<td>Engineering</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Information Technology</th>
<th>Supplier Relations</th>
<th>Green Resources</th>
</tr>
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<tbody>
<tr>
<td>IT Management</td>
<td>Performance</td>
<td>Green Marketing</td>
</tr>
<tr>
<td>Information Systems</td>
<td>Partnership</td>
<td>Raw Material</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Integration</td>
<td>Consumables</td>
</tr>
</tbody>
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*Colors represent the level of competency: Green (Excellence), Yellow (Competent), Red (Non-Competent)*
A Forecast for 2013-17

- Manufacturing performance critical to state’s and region’s comeback. Solid 2011 at most a partial recovery:
  - Still down 400,000 mfg jobs from 2000
  - Detroit 3’s share half what it was in 1978
- A moment of threat and opportunity:
  - A weak dollar, rising transportation prices, and higher Asian costs could ignite more than recent anecdotal reshoring, and ...
  - Vehicle lightweighting to meet 2025 CAFÉ standards could bring a sea-change in materials and fabrication ...
This is also the area in which high-performance computing could be important for SMMs – being able to simulate the performance of new-material parts without building and testing prototypes.