California Workforce Investment Board
Green Collar Jobs Council Meeting
December 8, 2009
It long has been recognized that the manufacturing sector is the foundation for economic vitality in California and the United States.

Companies can capture more market share, increase bottom line profits and be good corporate citizens by implementing an effective “lean and green” program.

Since 1995, The Corporation for Manufacturing Excellence (Manex) has provided a broad array of proven solutions and resources exclusively to manufacturers, distributors, and their supply chains, enabling them to compete on a global scale.

We use a holistic and proven approach – from strategy through implementation – to impact all facets of business performance.

The results: growth, profitability, and competitive advantage.
About Us

• Manex is a premier provider of high-value consulting and business advisory services exclusively to manufacturers, distributors and their supply chains, enabling them to improve global competitiveness by significantly increasing their growth, productivity, quality and profitability

• We are a 501(c)(3); NorCal’s sole resource for improved business performance focused on small/midsized manufacturers/distributors, we create economic and workforce development

• Partner with economic development firms, federal and state agencies, other non-profits (DOC, NIST, DOL, EPA, EDD/ETP, SBDC, GSN); team on programs, leverage grants

• Partner with private industry (accounting, banks, IBanks, PE, altL)

• Consultants average 20 years experience

• Proven ROI - 10:1 to 38:1 – US DOC/NIST

• Involved with TBAP since its inception (lead subcontractor for business assistance in TBAP1, prime contractor in TBAP2)
What We Do

strategy > people > process > performance
Strategy

- Focused on growth/revenue/competitive advantage
  - What is the market environment (macro, competitive, customer)?
  - What do/can we do better?
  - What is “better” worth?
  - What do our customers need/want?
  - What do they desire/value?
  - What is our strategy?
  - What are our mission, vision and value statements?
  - How do we accomplish these? (Need a plan!)
People

- Focused on workforce development
  - What resources (human capital) are required?
  - How do we get “buy in” from the workforce?
  - How do we organize or coordinate efforts?
  - Do they have the skill set needed?
  - How do they learn?
  - Are they empowered to act?
**Process**

→ strategy > people > process > performance

• **Focused on the “how”**
  - What processes support the strategy?
  - What processes/steps add value?
  - What processes/steps have no value?
    - Minimize the “must do’s”
    - Eliminate the “just do’s”

• How do we eliminate WASTE?
  - Identify the sources or reasons for waste
  - Ex: Time (initial+rework), raw materials, scrap, landfills/etc

• How should processes and flow be optimized?
  - Time, Cost, Quality, Value

• How do we sustain the momentum?
Performance

- **Focused on measuring/managing/improving**
  - You can’t improve what you don’t measure
  - What are the appropriate KPIs?
  - How do we measure them?
  - Who needs to know what (cascading KPIs)?
  - How do they find out (dashboards, scorecards, andon systems)?
  - What do we do with the information?
    - Fix/improve now, (gather fruit on the ground!) and then…
    - Pipe info/data to restart the whole process (flow back to strategy, continuously improve)
    - Be better than the competition
Representative Results

• Over the course of a recent 12-month period, our clients reported an annual aggregated:
  • $117 million in sales increased
  • $37 million in cost savings
  • $25 million in prevented expenditures
  • 912 jobs created or retained
Why “Lean & Green” is So Important

Real-life statistics: 36% of the world’s CO2 emissions are from manufacturers; including all industries, that number is nearly doubled. Over the past 30 years, carbon emissions have increased by more than 62%.

<table>
<thead>
<tr>
<th></th>
<th>As Is</th>
<th>Can Be</th>
</tr>
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<tbody>
<tr>
<td>Global food processor</td>
<td>900k metric tons</td>
<td>600k metric tons</td>
</tr>
<tr>
<td>Food processing industry (U.S.)</td>
<td>94.7 million metric tons</td>
<td>65 million metric tons</td>
</tr>
<tr>
<td>Core manufacturing sector</td>
<td>1,401 million metric tons</td>
<td>980 million metric tons</td>
</tr>
<tr>
<td>Per U.S. person</td>
<td>4.6 metric tons</td>
<td>3.2 metric tons</td>
</tr>
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</table>

From reducing the emissions from manufacturing, by making plants and operations more efficient, the impact would be as great as pulling 80 million vehicles off the road.

The cost of virtually all core consumer products (food, electronics, personal care, etc.) could be reduced by 15%, and companies would make more in profits.
Perceived Objections to Becoming “Lean & Green”

- “Out of state (or lower cost) competitors are killing us”
- Flat or declining revenue or increased revenue with diminishing returns
- Flat or declining market share
- Margins pressure (gross, op, net)
- Write-offs, write-downs, markdowns, obsolescence
- Increasing customer or product concentration
- “Onerous” customer requirements for time/cost/quality
- Raw materials inventory increasing/high
- Finished goods inventory increasing/high or low turns
- Suboptimal labor productivity
- Rework, scrap, quality issues
- Rush to build (CapX) for more capacity
- Government “green” mandates are too expensive
Government Mandates are on the way to reduce emissions and go “Green”

WASHINGTON - President Barack Obama is putting the U.S. government on a greenhouse-gas diet:

• “In an executive order signed Monday, Obama directed all agencies to set the first-ever targets for reducing climate-altering pollution from government buildings, fleets, and federal workers' commutes”
  • AP. updated 12:33 p.m. PT, Tues. Oct. 6, 2009

• “At the international climate meetings in Copenhagen in December, Mr. Obama will tell the delegates that the United States intends to reduce its greenhouse gas emissions “in the range of” 17 percent below 2005 levels by 2020 and 83 percent by 2050”
  • New York Times, November 25, 2009
Manex’s Proven Methodology

- High level business assessment vs. “best in class”
- On site assessment of the operations from a flow and waste perspective
  - Value stream map
  - Process map
- Develop roadmap for improvements
  - What does the current state look like?
  - What should the future state look like?
  - Capture “fruit on the ground” for immediate improvements (< 60 days)
  - Create roadmap and plan for long term improvements (6 months)
- Implement Lean Manufacturing Principles
  - Teach the concepts
  - Prove the concepts
  - Implement the concepts
  - Train the team
  - Promote your accomplishments to your customers
Manex’s Proven Successes

• **TBAP – Tire-derived product Business Assistance Program**
  - The California Integrated Waste Management Board has contracted with Manex to provide business assistance to tire recyclers to divert waste tires away from the waste stream (landfill) and into recycled rubber products
    - Playground surfaces
    - Rubber “bark” and “wood chips” for landscaping
    - Rubber sidewalks
    - Ground rubber as component of asphalt

• **Alameda WIB – NUMMI Supplier Assessments**
  - Alameda County WIB has contracted with Manex to provide assessments for all Alameda NUMMI suppliers that will be affected by plant closure. The goal is to avert layoffs and re-purpose these businesses (acquire new customers, enter new markets, save/strengthen employment)
    - Identify core strengths
    - Identify target markets
    - Benchmark against similar companies to identify businesses likely to survive
    - Avert layoffs
Example: Benchmark Review

Analysis of 12 key operating metrics and percentile ranking: actual vs goal: key opportunities are:

- Inventory turns (12.55 vs. 20)
- Scrap & Rework (7.59% vs. 3%)
- On Time Delivery (63% vs. 85%)
- Schedule Bumping (95% vs. 25%)
- Employee Turnover (17% vs. 10%)

Output includes the value of each improvements @ over $500,000 per year

Database is comprised of tens of thousands of operating companies. Each analysis includes a peer (comparables) base of 25 – 64 companies.
Example: Benchmark Results

One time savings of $78K for inventory turns

Over $535k in annual saving when targets are achieved

Example: Benchmark Results

Payoff Analysis

Current and Future State Green Layout

<table>
<thead>
<tr>
<th>Situation</th>
<th>KPI</th>
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<tbody>
<tr>
<td>Raw materials and waste</td>
<td>Over 45% waste</td>
</tr>
<tr>
<td>Running 2 shifts per day</td>
<td>8 pieces of equipment, 200+ lights and devices</td>
</tr>
<tr>
<td>Rework of finished goods</td>
<td>12% QA failure</td>
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<td>Profitability</td>
<td>-3.2%</td>
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<td>Raw materials and waste</td>
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<tr>
<td>Running 2 shifts per day</td>
<td>50% energy consumption and waste streams</td>
</tr>
<tr>
<td>Rework of finished goods</td>
<td>1% QA failure</td>
</tr>
<tr>
<td>Profitability</td>
<td>+5.7%</td>
</tr>
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</table>
### What Connects “Lean” to “Green”

**Situation** | **Metrics**
--- | ---
Wasted motion, wasted energy | 30% more than needed
Too much raw material used to create finished product | Non-design scrap is 12% rather than 1%
Quality issues abound | 20% QA failure
Waste streams (solids, toxins) | 600% more than necessary, 17x more $
Profitability (the other “green”) | 0.24%

**Situation** | **Metrics**
--- | ---
Efficient use of motion & energy | 1 shift/day, not 2
Errors eliminate more consumption of raw material than necessary | Non-design scrap is down to 2%
Quality issues abound | 1.9% QA failure
Waste streams (solids, toxins) | 83% less material, 94% less cost
Profitability (the other “green”) | 4.1%
“Lean & Green” is common sense

Organization and order lead to:
1. Less errors, leading to
2. Less waste, which results in
3. Less scrap, resulting in
4. Less motion, which leads to
5. Less energy consumption, and
6. Less toxins and
7. Reduced waste streams, to attain
8. Less pollution, all the while
9. Increasing marketability, to
10. Maximize performance, and finally
11. Greater sales and profitability
Quantifying the Benefits

Real-life example: this client went from marginally profitable to highly profitable, the focus was on lean, but green was a tremendous side benefit.

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<th>New</th>
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<tr>
<td>Total Lead Time</td>
<td>21 days</td>
<td>15 days</td>
</tr>
<tr>
<td>Total Processing Time</td>
<td>6 days</td>
<td>5 days</td>
</tr>
<tr>
<td>Sales Levels</td>
<td>$240 million</td>
<td>$290 million</td>
</tr>
<tr>
<td>Pre-tax Earnings</td>
<td>2.67%</td>
<td>5.51%</td>
</tr>
<tr>
<td>Valuation</td>
<td>$109 million</td>
<td>$167.5 million</td>
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Becoming lean reduced the total effort, scrap, waste, conveyance/transportation, motion and energy. It also reduced the time to ship finished goods.

The competitive edge increased the sales of its product and the prices they charge, decreased the cost of manufacturing and their defect rate. They didn’t even market the fact that they reduced the impact on the environment.

These improvements increased the value of the company by $6 million.
Implementing Lean & Green

1. **Set the Foundation** – learn more and perform research before doing anything else.

2. **Follow Business Rules** – implement the changes that make business sense first, and then consider other changes.

3. **TC/PC/IC** – See table below to understand how to implement changes and improvements throughout the organization.

4. **Market Your Improvements** – Make more money from all of these improvements and investments.

<table>
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<th>Stages of a Concept</th>
<th>Description</th>
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<td>Before starting, explain the change to all affected (what/why/how)</td>
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<td>Whether during training or on the shop floor, prove why it’s better</td>
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<td>Have everyone perform an activity that results in “lean &amp; green”</td>
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*Stages of a Concept Description*

- **Teach the Concept (TC)**: Before starting, explain the change to all affected (what/why/how).
- **Prove the Concept (PC)**: Whether during training or on the shop floor, prove why it’s better.
- **Implement the Concept (IC)**: Have everyone perform an activity that results in “lean & green.”
Market Your Improvements

We are working hard to reduce our impact on the environment.

Here’s what we’ve done so far: cut energy consumption by 50%, reduce waste by 30%, etc.

And we will continue to improve.

Contact us today. Give us a chance to be your green supplier of choice.
Example – Recommendations Landscape

Legend:
- **Complex**
- **More Advanced**
- **Basic/Critical**

**Lean & Green Operations**
- **Facilities & Plant Utilization**: 12 mos.
- **Supplier Development**: 18 mos.
- **KPI Creation**: 12 mos.
- **Materials Flow**: 6 mos.
- **Plant Layout**: 6 mos.
- **Workforce Development**: 3-6 mos.
- **Basic Organization**: 3-6 mos.
- **Administrative**: 3 mos.

**Lean & Green Sales**
- **Valuation Analysis**: 24 mos.
- **Current Client Base**: 3 mos.
- **Pursuit Strategy**: 6 mos.
- **Marketing & PR**: 1 mo.

**Lean & Green Assessment**
**Marketing of Lean & Green**
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