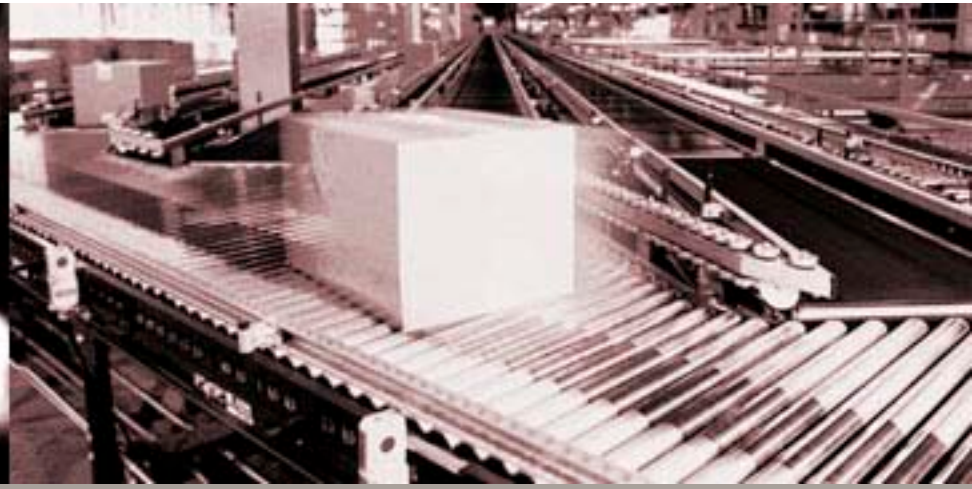
manex Business Transformation. Delivered.



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

strategy > people > process > performance

- **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

strategy > people > process > performance

- **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

strategy > people > process > 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%.

	As Is	Can Be
Global food processor	900k metric tons	600k metric tons
Food processing industry (U.S.)	94.7 million metric tons	65 million metric tons
Core manufacturing sector	1,401 million metric tons	980 million metric tons
Per U.S. person	4.6 metric tons	3.2 metric tons

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

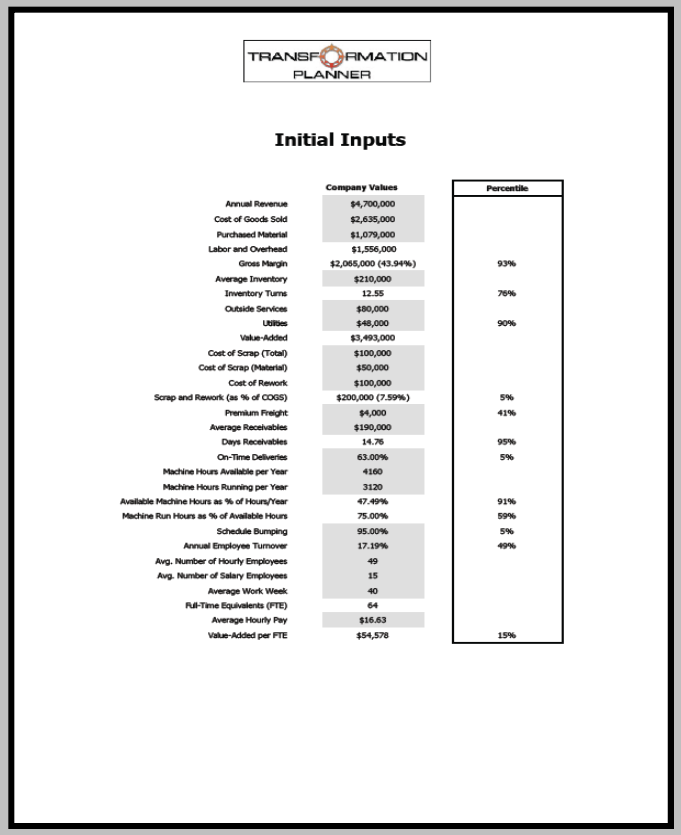
Example: Benchmark Review

Analysis of 12 key operating metrics and <u>percentile ranking: actual vs goal: key opportunities are:</u>

- **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.



TRANSFORMATION PLANNER

Initial Inputs

	Company Values	Percentile
Annual Revenue	$4,700,000	
Cost of Goods Sold	$2,635,000	
Purchased Material	$1,079,000	
Labor and Overhead	$1,556,000	
Gross Margin	$2,065,000 (43.94%)	93%
Average Inventory	$210,000	
Inventory Turns	12.55	76%
Outside Services	$80,000	
Utilities	$48,000	90%
Value-Added	$3,493,000	
Cost of Scrap (Total)	$100,000	
Cost of Scrap (Material)	$50,000	
Cost of Rework	$100,000	
Scrap and Rework (as % of COGS)	$200,000 (7.59%)	5%
Premium Freight	$4,000	41%
Average Receivables	$190,000	
Days Receivables	14.76	95%
On-Time Deliveries	63.00%	5%
Machine Hours Available per Year	4160	
Machine Hours Running per Year	3120	
Available Machine Hours as % of Hours/Year	47.49%	91%
Machine Run Hours as % of Available Hours	75.00%	59%
Schedule Bumping	95.00%	5%
Annual Employee Turnover	17.19%	49%
Avg. Number of Hourly Employees	49	
Avg. Number of Salary Employees	15	
Average Work Week	40	
Full-Time Equivalents (FTE)	64	
Average Hourly Pay	$16.63	
Value-Added per FTE	$54,578	15%

Example: Benchmark Results

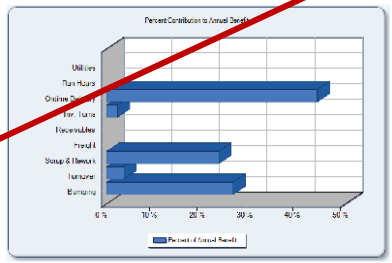
One time savings of $78K for inventory turns

Over $535k in annual saving when targets are achieved

TRANSFORMATION PLANNER

Payoff Analysis

Performance Metric	Current		Proposed		Final Target			
	Value	Percentile	Value	Percentile	Value	Percentile	Annual Benefit	One-Time Cash Conv.
Utilities	$48,000	90%	$37,600	[illegible]	$48,000	90%	$0.00	
Run Hours as % of Available	75.00%	59%	90.33%	84%	75.00%	59%	$0.00	
On-Time Deliveries	63.00%	5%	81.60%	30%	85.00%	41%	[illegible]	
Inventory Turns	12.55	76%	27.21	90%	20	83%	$11,738	$78,250
Days Receivables	14.76	95%	33	95%	14.76	95%	$0.00	$0.00
Premium Freight	$4,000	41%	$1,106	66%	$4,000	41%	$0.00	
Scrap and Rework	7.59%	5%	2.93%	30%	3.00%	28%	$120,950	
Employee Turnover	17.19%	49%	4.10%	74%	10.00%	63%	$18,360	
Schedule Bumping	95.00%	5%	22.00%	30%	25.00%	25%	$136,150	
						Total:	$514,347	$78,250

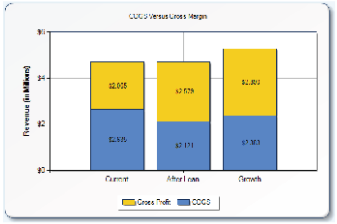


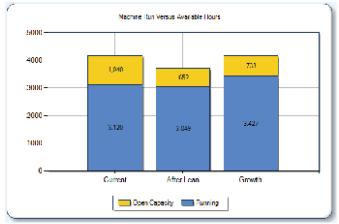
TRANSFORMATION PLANNER

Growth Evaluation

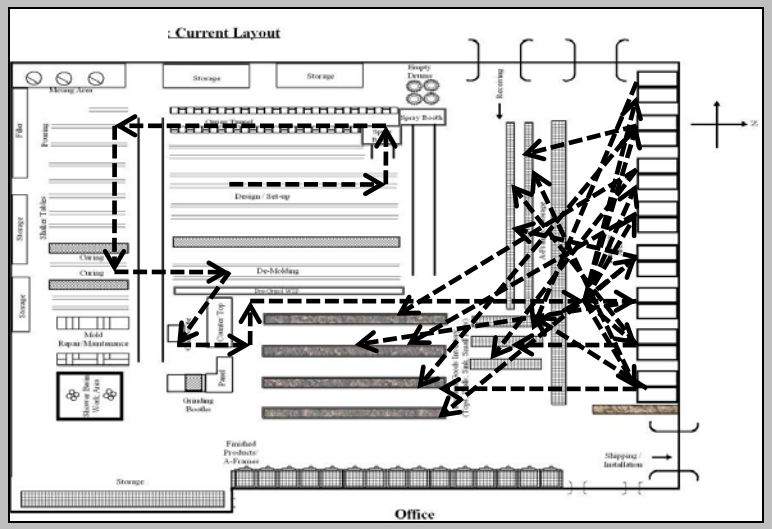
Implementing Lean Improvements will free existing labor and machines to do more work

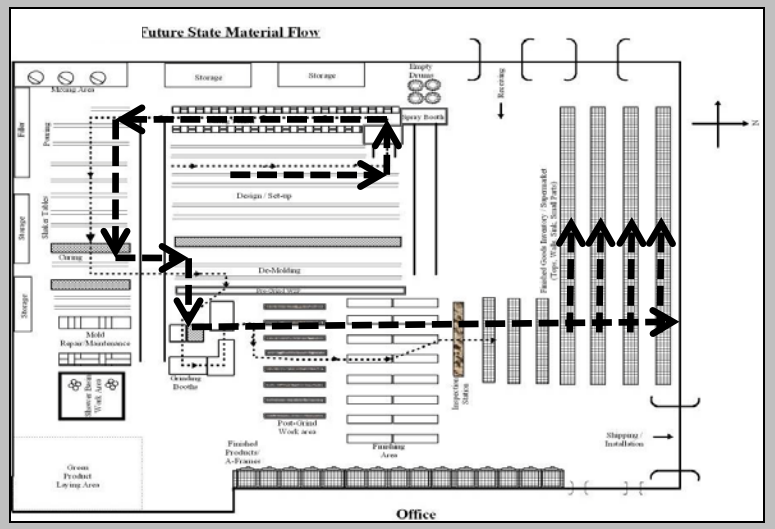
Filling Capacity Created by Lean Improvements:
Keeping your shop open 4160 hours per year and achieving the final targets for machine run time, scrap, rework and schedule bumping, your company could fulfill additional orders of: **$581,918**





Current and Future State Green Layout

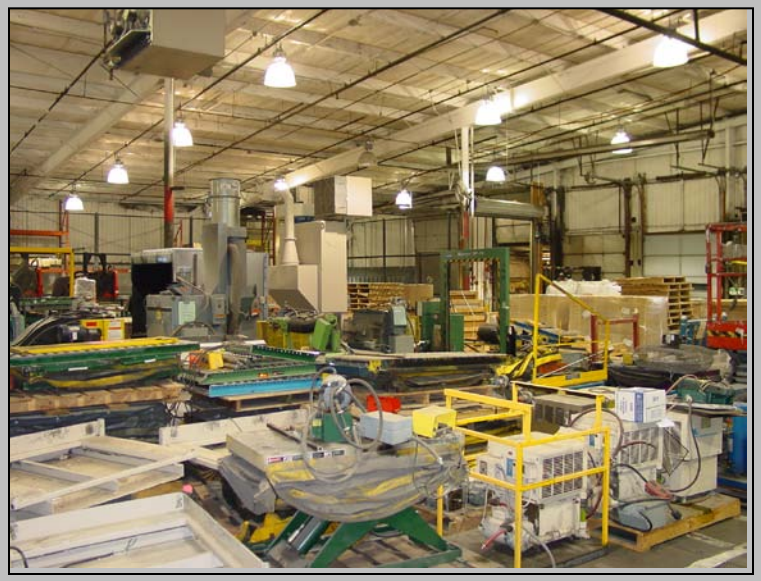




Situation	KPI
Raw materials and waste	Over 45% waste
Running 2 shifts per day	8 pieces of equipment, 200+ lights and devices
Rework of finished goods	12% QA failure
Profitability	-3.2%

Situation	KPI
Raw materials and waste	Over 45% waste
Running 2 shifts per day	50% energy consumption and waste streams
Rework of finished goods	1% QA failure
Profitability	+5.7%

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

	Old	New
Total Lead Time Total Processing Time	21 days 6 days	15 days 5 days
Sales Levels	$240 million	$290 million
Pre-tax Earnings	2.67%	5.51%
Valuation	$109 million	$167.5 million

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.

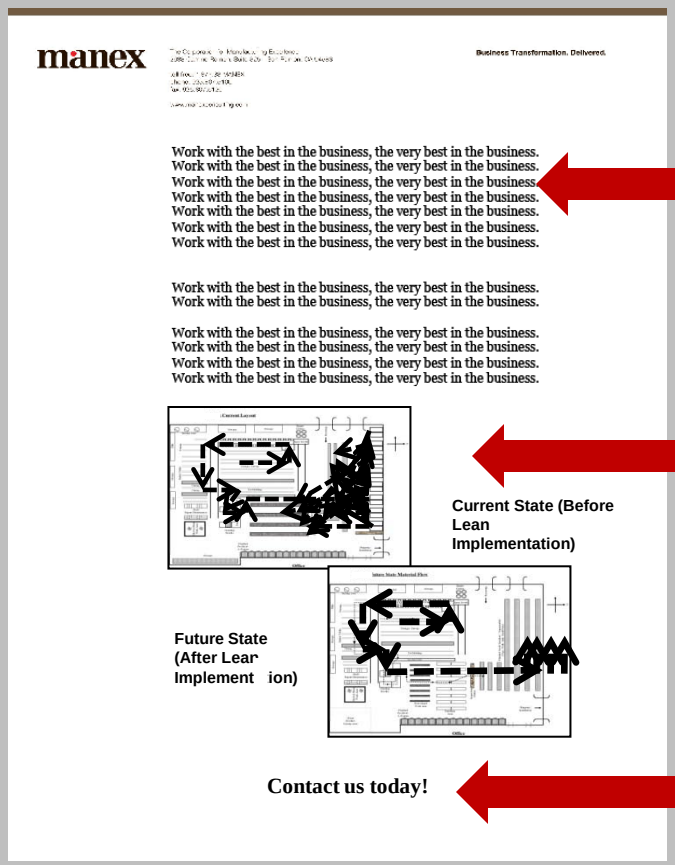
Implementing Lean & Green

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**

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"

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

Market Your Improvements



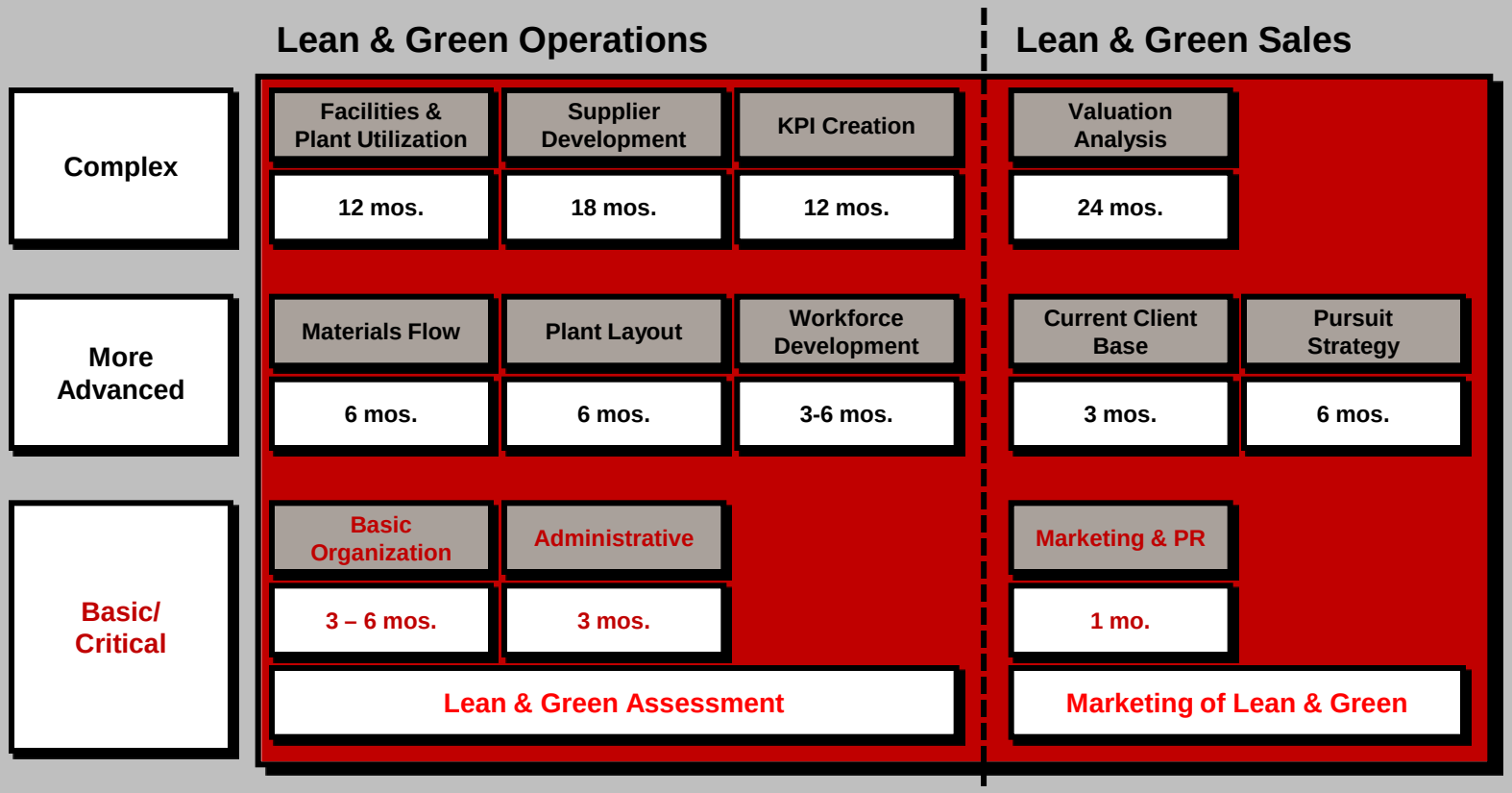
We are working hard to reduce our impact on the environment.

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

And we we will continue to improve.

Contact us today. Give us a chance to be your green supplier of choice.

Example – Recommendations Landscape



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