

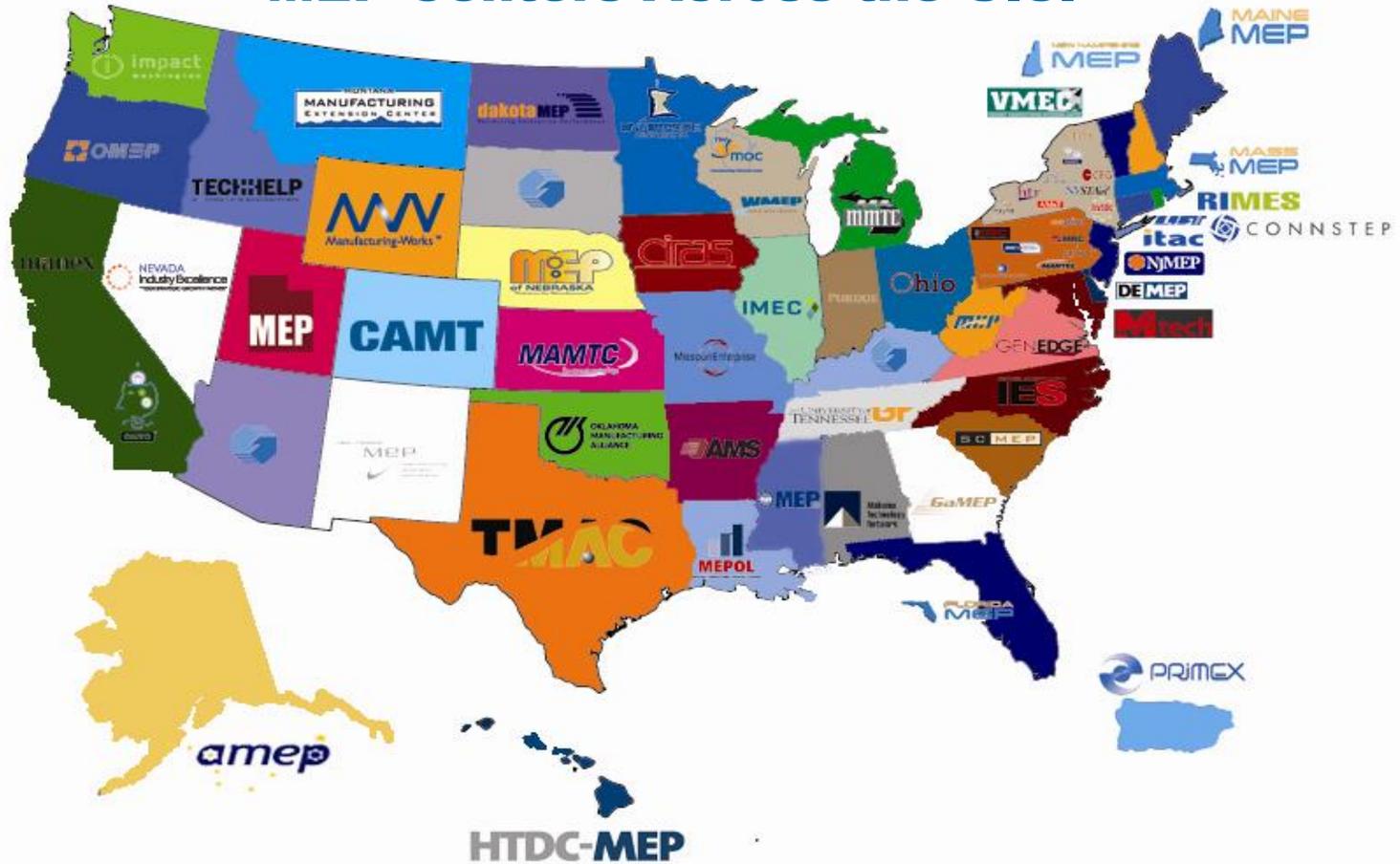


Introduction to Manex and Lean Manufacturing

The NIST MEP Program in Short . .

- Program started in 1988, with at least one center in all 50 states by 1996
- 60 centers with over 370 field locations
- System wide, Non-Federal staff is over 1,450
- Partnership Model – Federal/State/Industry (if applicable)
- Manex: 1/3 Federal, 2/3 Industry
- Program started because of “market failures” in terms of access to information, technical expertise and cost hurdles within SME sectors.
- Emphasis on performance – program and center – measurement based upon impact of center services on client firms. sCore Metrics.
- Manex is a non-profit public benefit corporation and was founded in 1995 as an MEP for Northern California (San Joaquin County to the California / Oregon border)
- Cost effective

MEP Centers Across the U.S.



Why implement Lean?

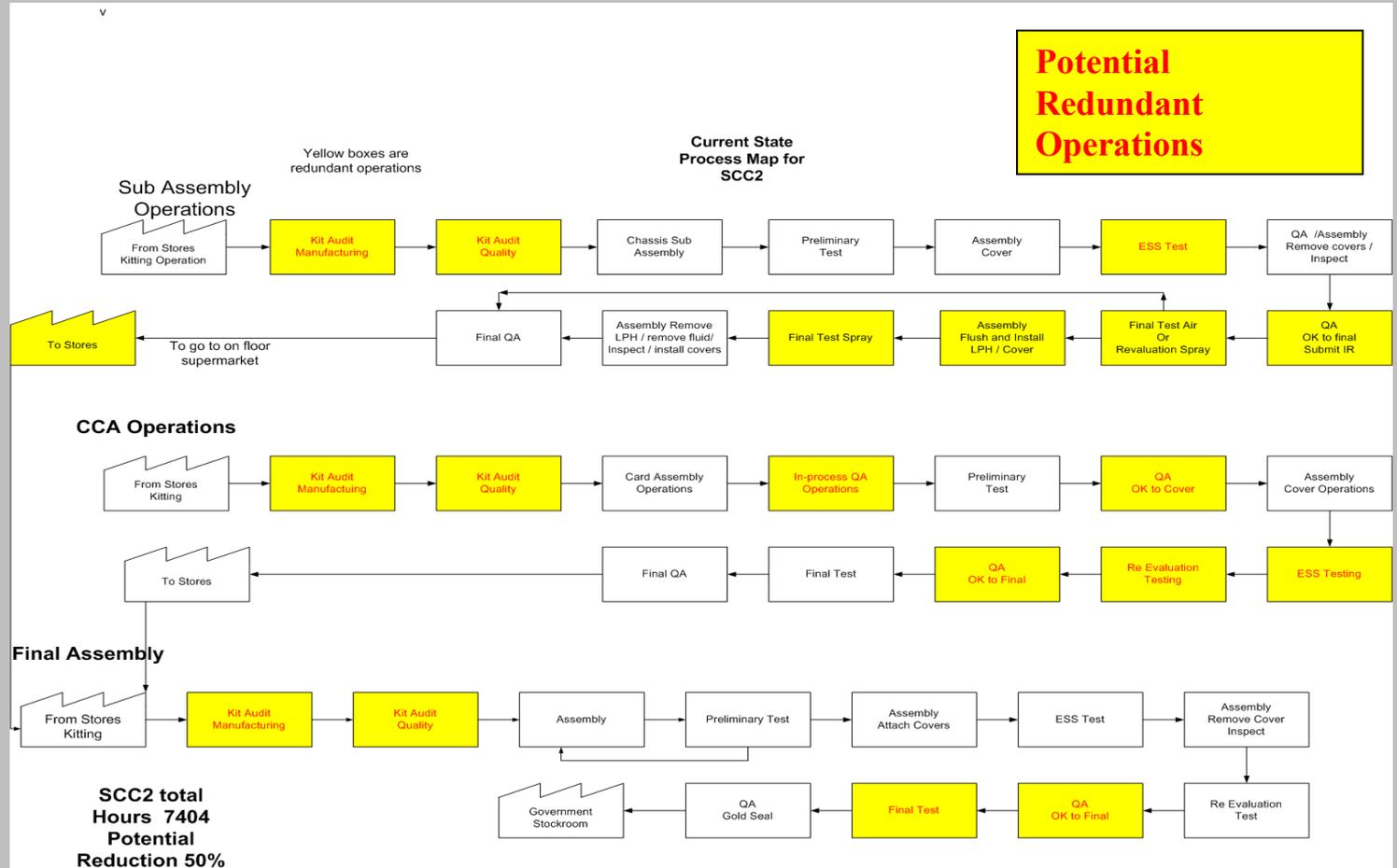
4 key points:

- **Lean is simple**
- **Lean is common sense**
- **Lean can be used in any organization and in any area of the organization**
- **Lean improvements will drop to the bottom line**

What is a Lean Manufacturing System?

- **Systematic approach**
- **Eliminates waste**
- **Fosters continuous improvement**
- **Listens to the voice of the customer**
- **Always Strives for perfection**

Current State Map. Systematic Approach



Eliminating NVA (Waste) - DOWNTIME

DEFECTS



OVER PRODUCTION



WAITING



NVA PROCESSING



TRANSPORTATION



INVENTORY



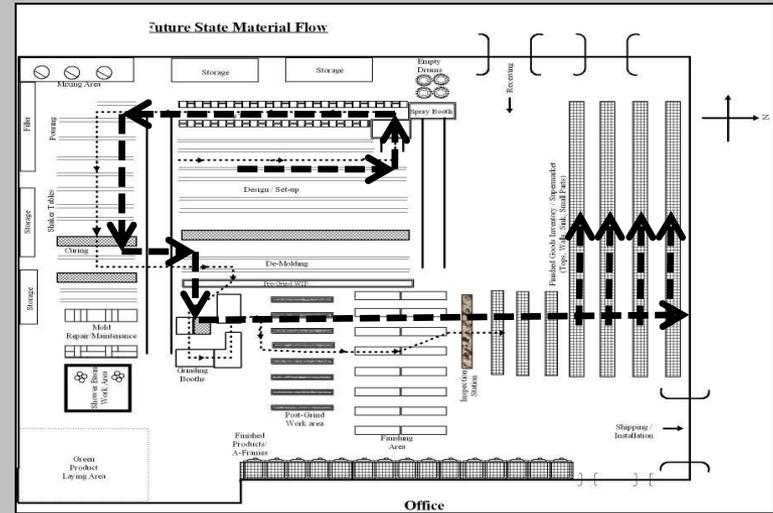
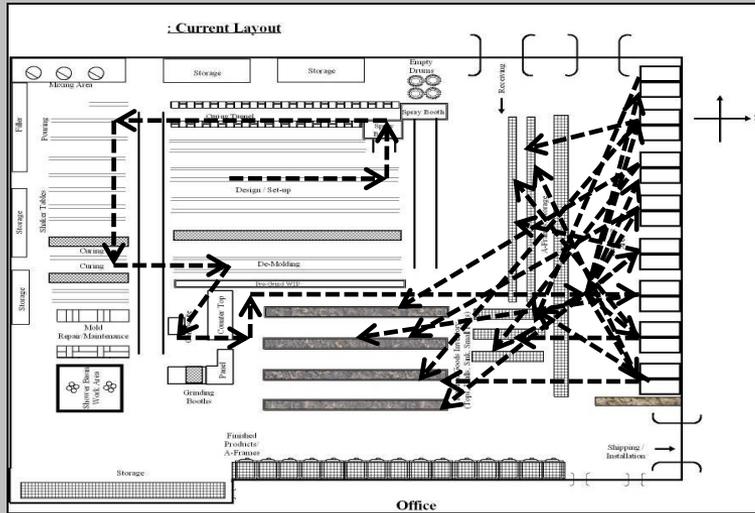
MOTION



EMPLOYEE



Eliminate Waste



Situation	KPI
Raw materials and waste	Over 45% waste
Running 3 shifts per day	8 pieces of equipment, 200+ lights and devices
Rework of finished goods	12% QA failure
Profitability	-3.2%

Improvement	KPI
Raw materials and waste	Under 15% waste
Running 2 shifts per day	50% energy consumption and waste streams
Rework of finished goods	1% QA failure
Profitability	+5.7%

The Need for Good Data: Operational Metrics Explain High COGS

Income Statement	
Revenue	\$26.2M
COGS	\$16.8M
Gross Profit	\$9.4M
Operating Expenses	\$5.5M
Net Income	\$3.9M

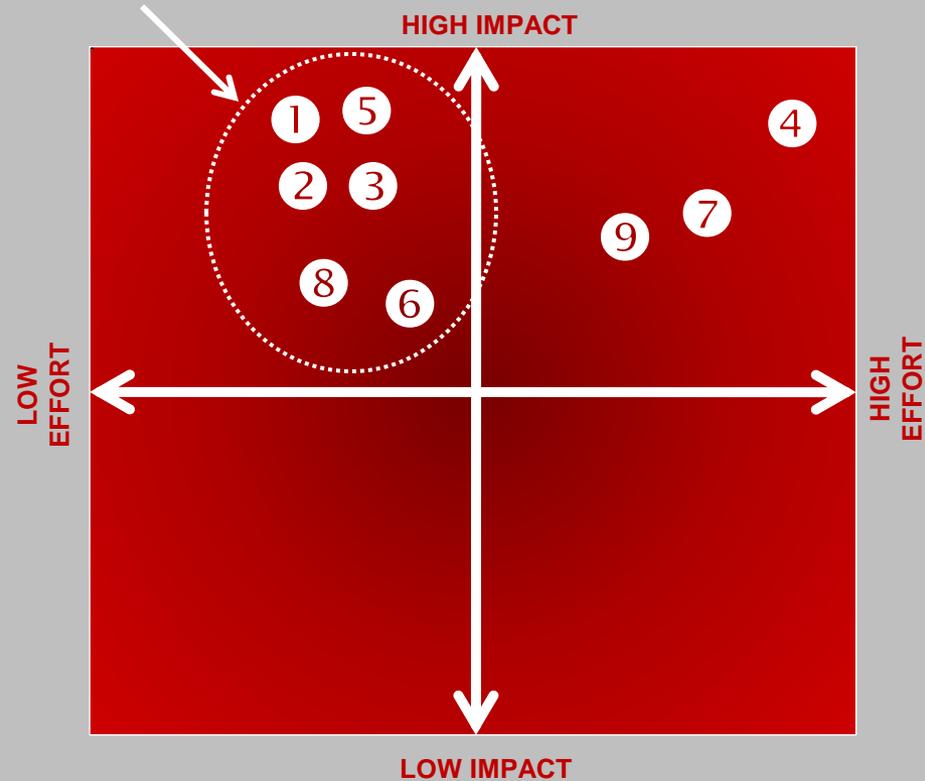
Enterprise KPI	
OTD	96%
OEE	73%
Inventory TO	25

Operational Metrics	
Availability	95%
Performance	90%
Quality	85%

Impact/Effort Chart:

CODE	ISSUE
	Workplace organization Improvements 5S
2	Scrap Reduction Program
3	Layout improvements / line combinations
4	Hire enough MES to standardize our manufacturing procedures
5	Reduce Change over Time on Croissant Line
6	Reduce errors at Order Entry
7	Purchase high speed packaging line
8	Create training aid
9	Implement new ERP system

Low Hanging Fruit



Importance of Perfection: Being at 6σ

Type	At 6σ (99.99973%)	At 4σ (95.46%)
Postal delivery in US	7 lost mails per hour	20,000 lost mails per hour
Surgical operations in US	1.7 incorrect surgical operations per week	5,000 incorrect surgical operations per week
Flight landings in US	One short or long landing at major airports each year	Two short or long landings at most major airports daily
Drug prescriptions in US	68 incorrect drug prescriptions each year	200,000 incorrect drug prescriptions each year

What is Your Quality Level?

Benefits from Lean Initiatives

- **Safer work environment**
- **Improves morale**
- **Removes obstacles**
- **Improves productivity, efficiency, and maintenance**
- **Improves quality**
- **Lowers costs**

Results: Annual savings from plant consolidations

Category	Annual Savings
Labor Cost	\$360,000
Rent	\$245,000
Utilities	\$32,000
Hazardous disposal	\$12,000
Janitor Services	\$9,000
Trash Disposal	\$7,000
Maintenance & Repair	\$6,000
Travel between locations	\$4,000
Security Service	\$3,000
Total	\$678,000

22 months on lease remaining and company has secured a sub lease. Company will save \$1,243,000.and a further \$3,390,000 is the next five years!

Proof That “Lean Systems” Work

It does not matter what business you are in, going Lean will drive up the bottom line

1. Medical device manufacturer reduced their cost of production by over **50%**.
2. Accessories manufacturer increased **net income** more than **20%**
3. Contract manufacturer **doubled their market share and increased prices by 8%**
4. Food company achieved over **\$400k in sales** per employee, best in class
5. Division of aerospace company **increased sales by 700%**.
6. Automotive Supplier achieves **38% EBITDA and was awarded a \$7MM contract due to Lean Implementation**
7. **Leading winery saw \$300,000 in savings during the harvest by reducing waste in their processes.**

Client Testimonials

“It has been a long road to get where we are and we will continue to follow the process to continue to drive out waste in our process. This has been a culture change for our organization that has provided nothing but positive results.”

Jim A Klevenberg, Vice President, IntegenX

Client Testimonials

"Manex has provided invaluable assistance to Nutek. To our surprise, the process even gave us a clearer vision, more accountability, and a stronger team spirit."

Larry Nichols, CEO, Nutek Corporation



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