

National Institute of Standards & Technology (NIST)

Manufacturing Extension Partnership (MEP)



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Michigan Manufacturing Technology Center

Michael J. Coast, President

www.mmtc.org

1-888-414-6682



MICHIGAN MANUFACTURING TECHNOLOGY CENTER



Michigan Manufacturing Technology Center

- Created in 1991 for the sole purpose of serving Michigan's small and medium sized manufacturers, MMTC is a 501(c)(3) non-profit organization employing 60 full-time staff professionals
- MMTC is an affiliate of the federal Manufacturing Extension Partnership supported by the National Institute of Standards Technology (NIST) - U.S. Department of Commerce and the Michigan Economic Development Corporation

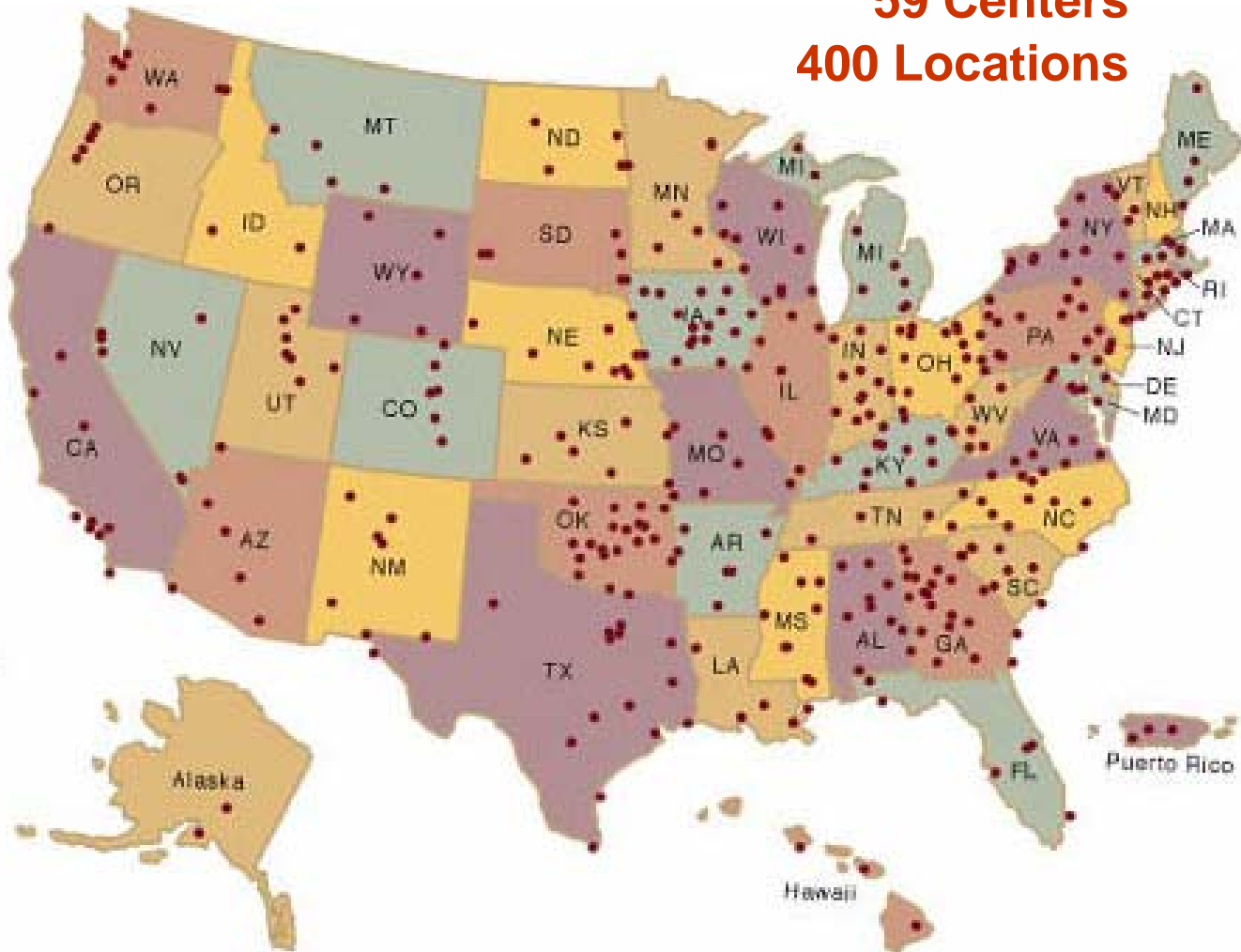
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MICHIGAN
ECONOMIC DEVELOPMENT CORPORATION



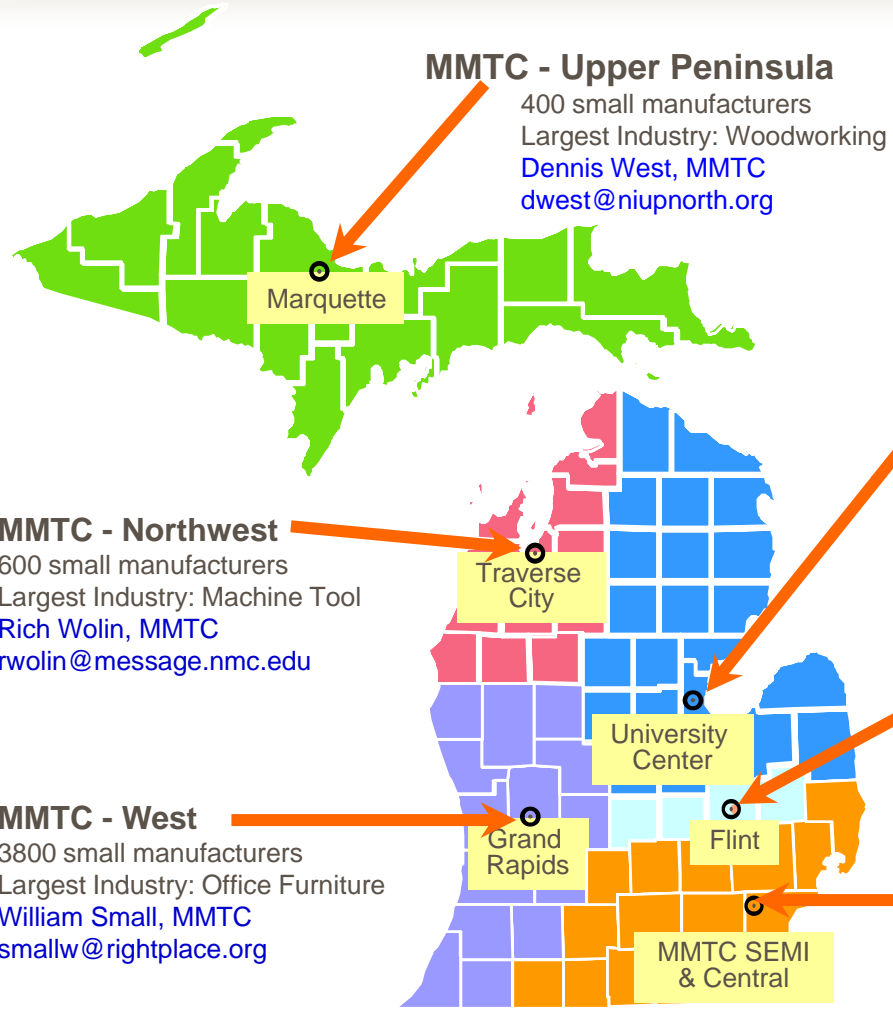
MEP Centers national network

59 Centers
400 Locations





**A total of 13,600
small
manufacturers**



MMTC
Michael Coast
President
mcoast@mmtc.org



Our Mission

To enhance the global competitiveness of Michigan's small and medium sized manufacturers.

Our Goal

To have a significant impact on our clients, which results in increased profits, reduced operational costs, increased sales, and newly created and retained jobs in Michigan.



What makes us unique.

- Our state and federal sponsors measure the impact of the training and services provided on the Michigan manufacturers we serve.
- MMTTC clients are interviewed by an independent, third-party survey firm one year *after* their project has been completed.



Good for Michigan manufacturers. Good for Michigan.

Results reported by NIST recently:



MMTC's impact goes beyond individual manufacturing customers. The sales improvements, cost savings, and jobs (created and retained) help to enhance Michigan's strong industrial base.



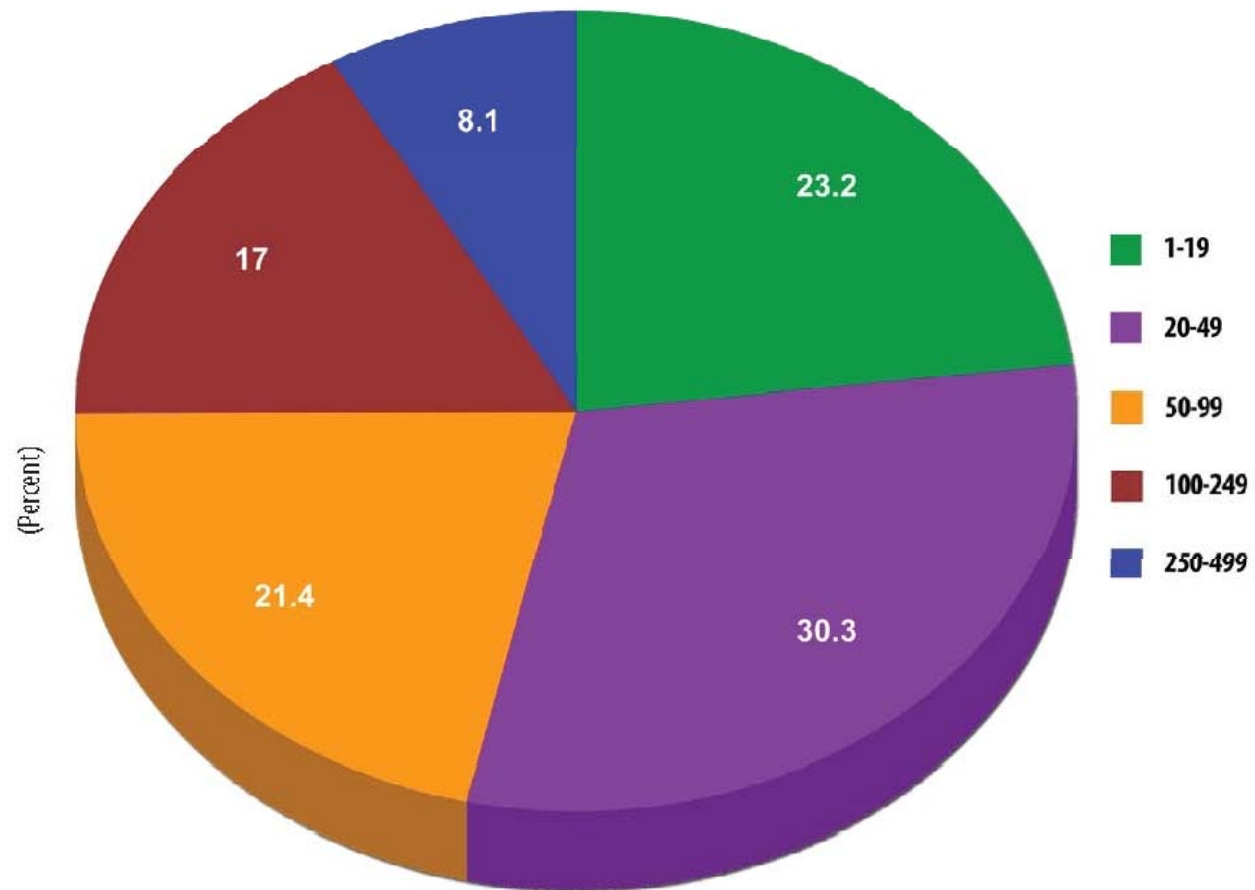
Nationwide Impact

In the most recent year for which evaluation data is available:

- MEP centers have completed projects with nearly 6,700 manufacturers
- When surveyed, the companies reported:
 - Adding or retaining more than \$10.5 billion in sales
 - Reducing costs by \$1.4 billion and
 - Creating or retaining more than 57,000 jobs.



Employment Size of Manufacturers Served

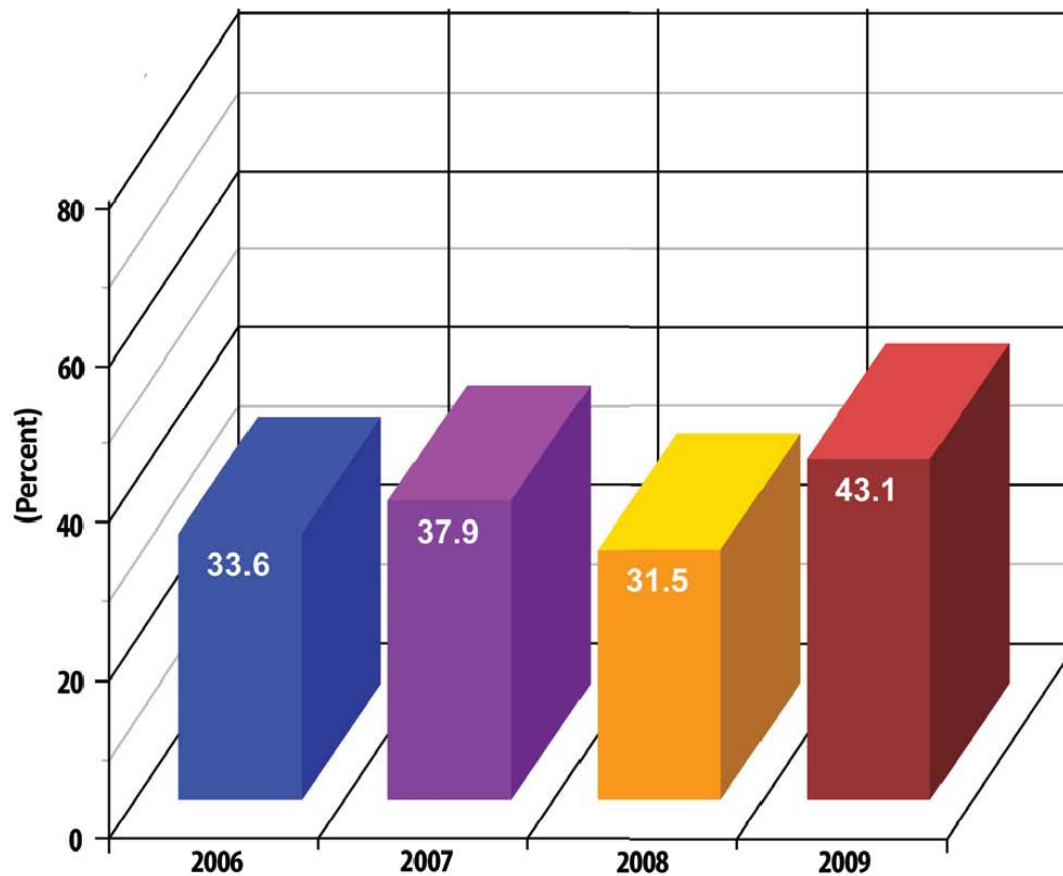


More of the customers served in 2009 had fewer employees than in previous years.

Source: 2009 MMTC Annual Report



Serving New Customers

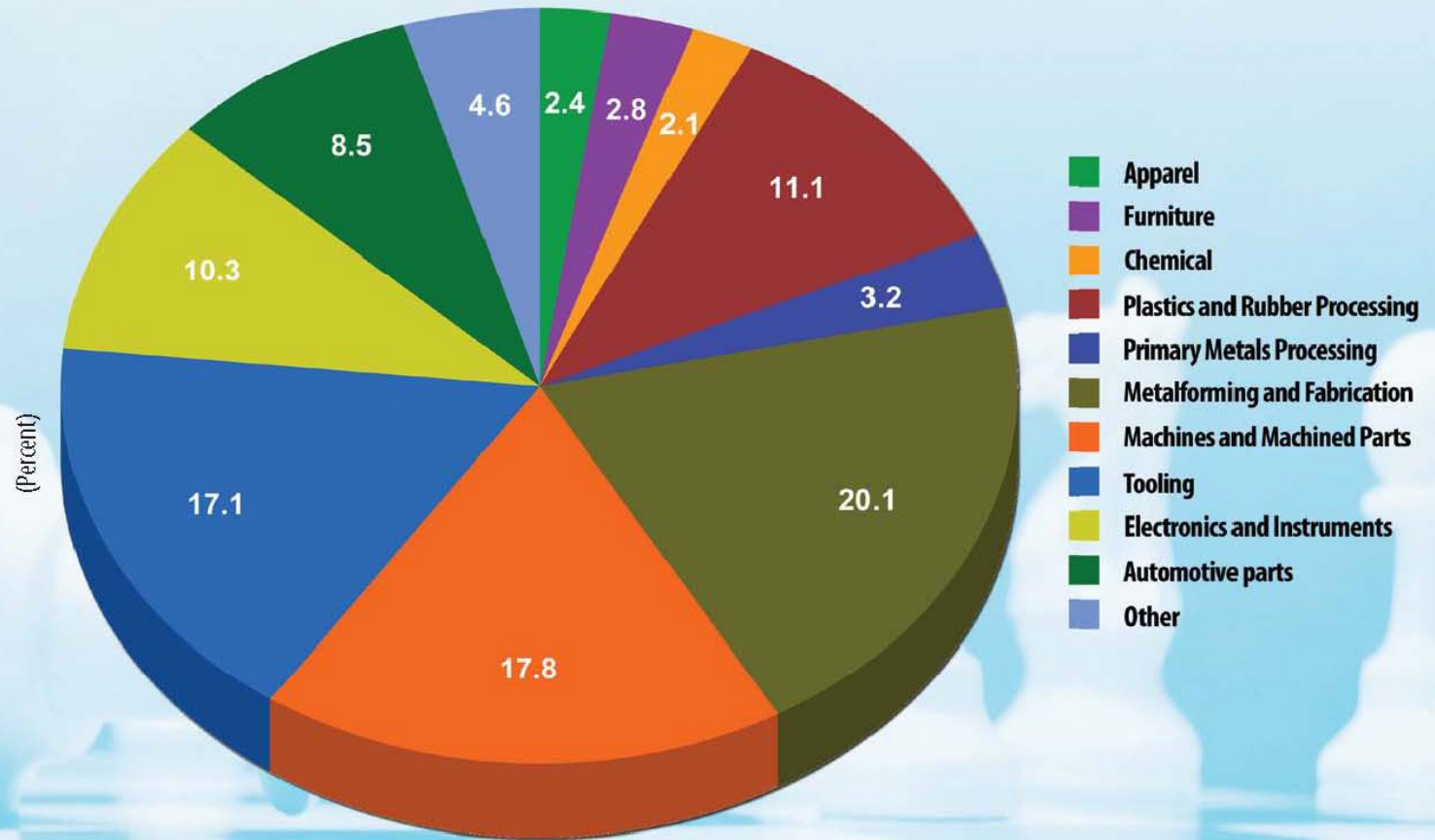


More of the companies with which MMTC worked in 2009 were first-time customers. Many of them sought our help to move beyond their traditional automotive customers.

Source: 2009 MMTC Annual Report



Clients Served by Industry Distribution



Source: 2009 MMTC Annual Report





Performance Benchmarking Service

The Michigan Manufacturing Technology Center is a **leading source** of performance benchmarking data for manufacturing. Since 1992, MMTC has collected vital operating data on small to medium sized manufacturers across North America. Measuring more than 80 key metrics, our database now exceeds 11,000 records.

All individual company information (input data and outputs reports) are kept strictly confidential.

www.performancebenchmarking.org



An exclusive service of

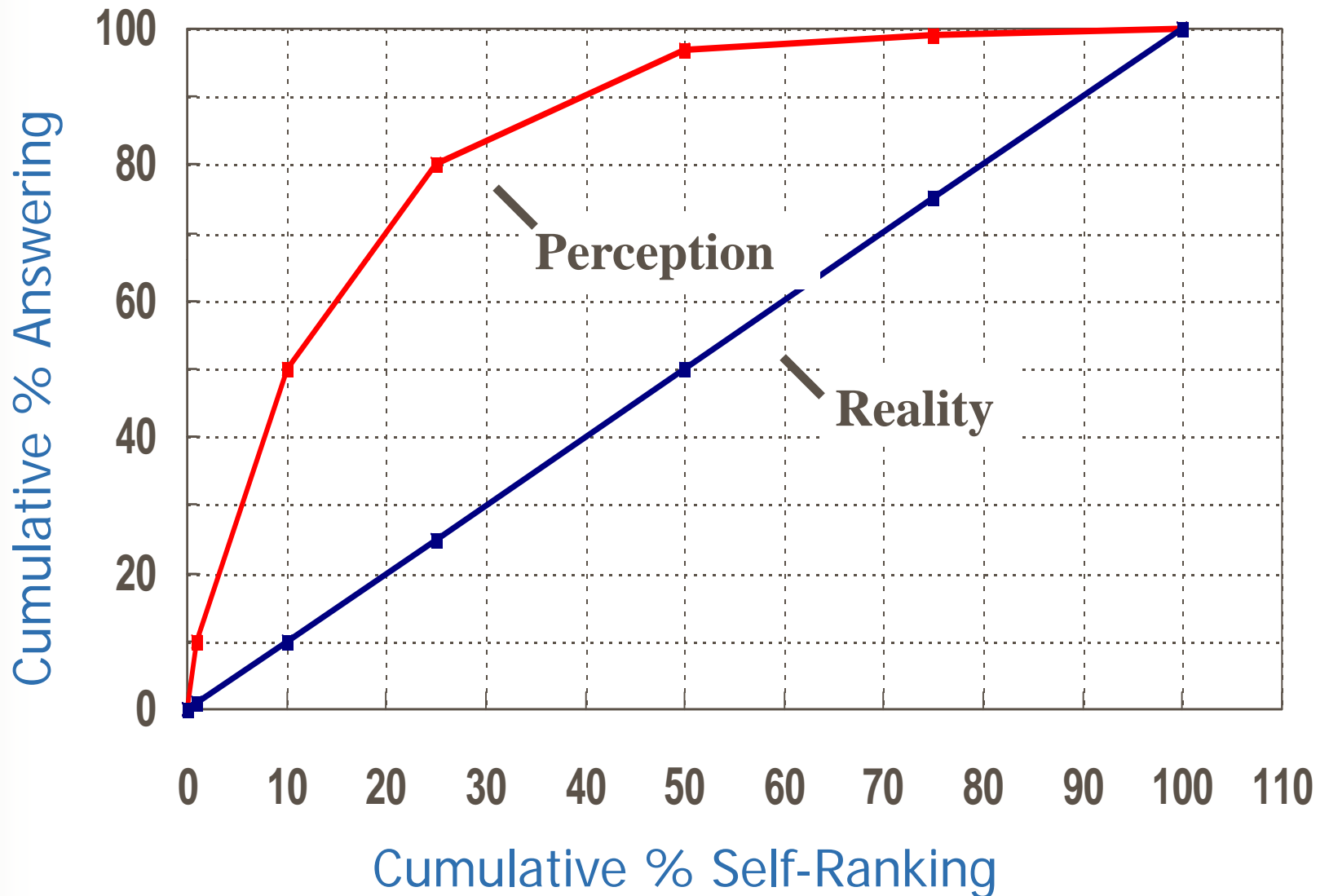


**Michigan Manufacturers
Save \$\$\$**

In partnership with the MEDC, Michigan manufacturers (with fewer than 500 employees) can receive one customized benchmarking report each year at no cost.

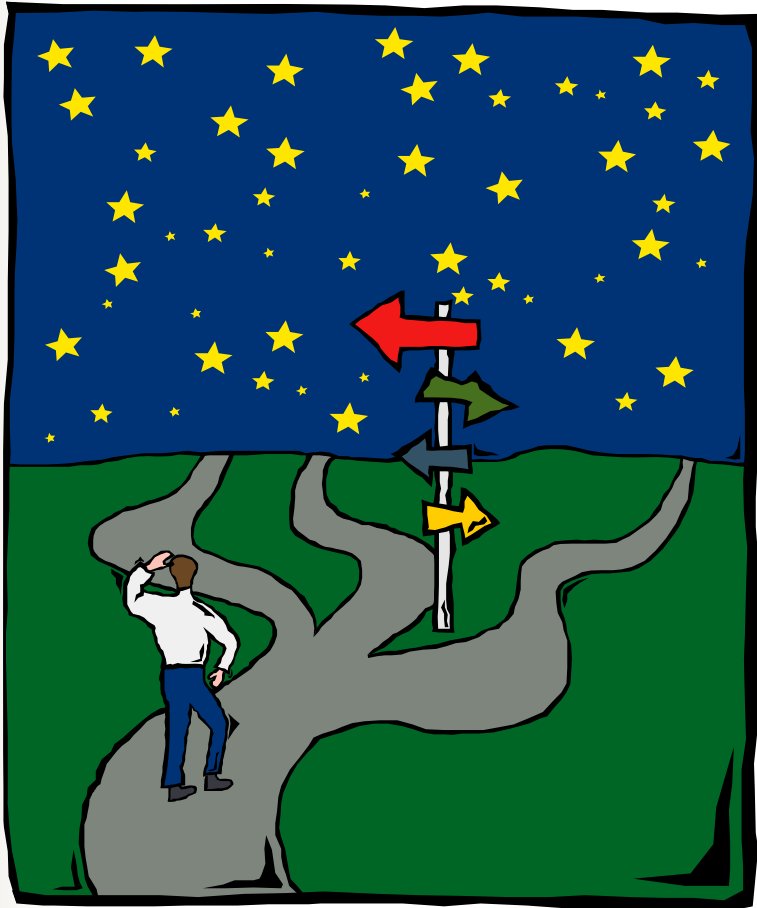


Amazingly, few companies really know how they stack up to their competition!





PBS results will help answer the question “Where do we start?”.



- Attack scrap & rework?
- Change payment terms / reengineer collections?
- Cut inventory levels?
- Stick to schedule?
 - Less bumping
 - Lower premium freight
- Attack late deliveries?
- Attack machine downtime?
- Attack energy use?
- Attack employee turnover?
- Get Lean in the office?



MMTC's Transformation Planner

- Developed in the late 1990's
- Proprietary tool of MMTC
- Licensed for use only to other MEP's
- Compares against "best in class"
- Projects monetary impact of improvements
- Recently enhanced to include the impact growth opportunities
- Data is refreshed from the "big" PBS database



Transformation Planner: Estimating the \$ VALUE of Improvement and Growth



- Compares your facility to your competition defined by:
 - Industry sector
 - Customer Market
 - Order Volume and Repetitiveness
- Places a \$ value on feasible levels of improvement
- Using data, it shows you the likely payoff of recommended improvement efforts and growth



Transformation Planner Evaluates:

- Gross Margin
- Inventory Turns
- Value-Added per Full Time Equivalent (FTE)
- Machine Utilization
- Order Bumping / Expediting
- Scrap and Rework / COGS
- Utilities Expense / Sales
- Premium Freight / Sales
- On-Time Delivery
- Days Receivable



Transformation Planner Provides

- Benchmark comparison to companies in your industry sector
- Ability to set realistic improvement targets for clearly understood performance metrics
- Calculates one-time and recurring annual financial benefits

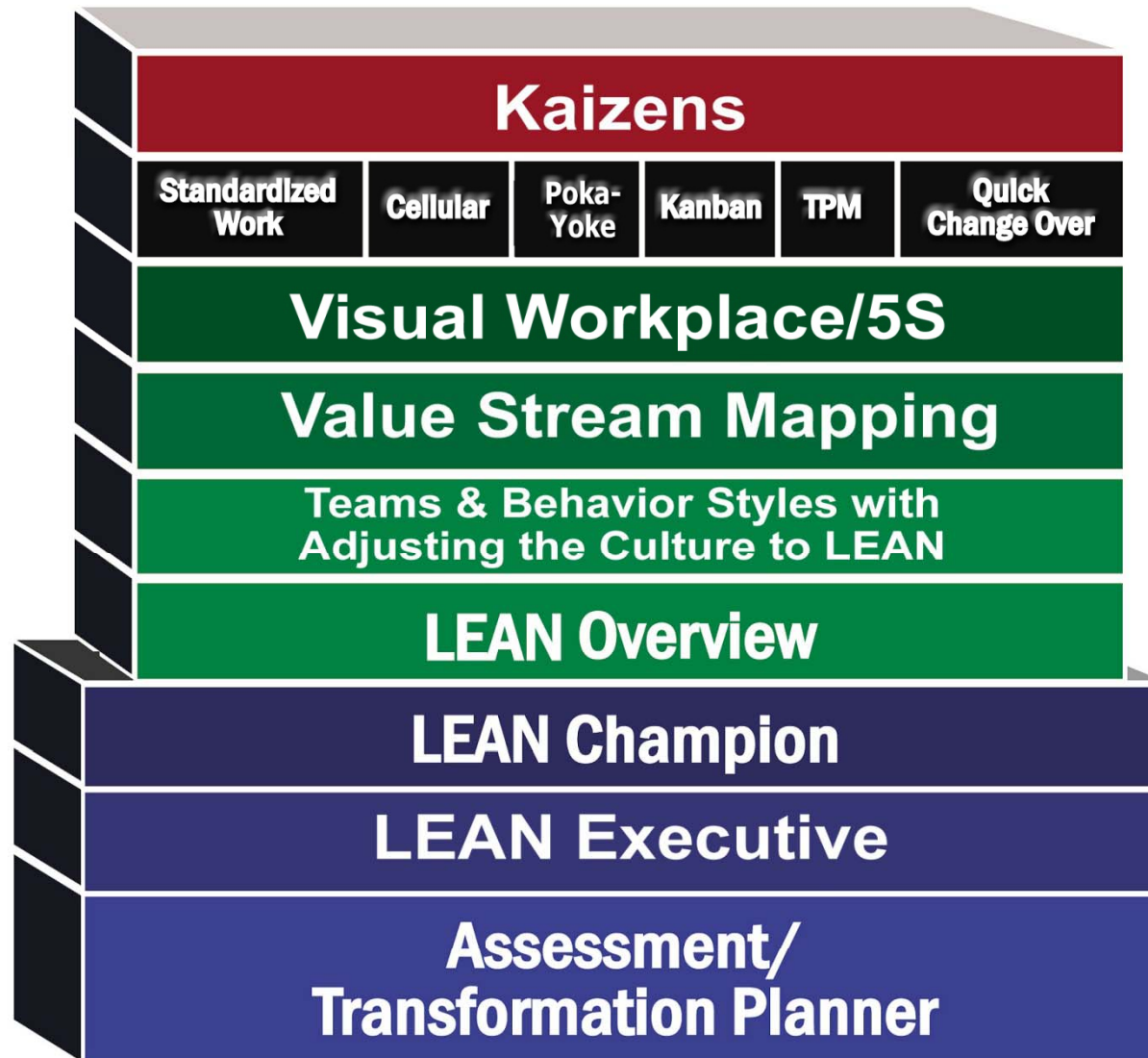


Operational Assessment

- Completion of confidential questionnaire to run initial Transformation Planner
- Facility tour by two member MMTC team
- Interview key managers
- Validate data
- Survey all employees
- Comprehensive report out to team
- Team attends MMTC LEAN Executive



Lean Implementation Cycle





LEAN Executive Workshop

Who:

- Top 3 executives from each company
- Those that have decision making power/authority
- Those responsible for the ultimate success of the company

Where:

- MMTC's Advanced Training Center in Plymouth, MI

How:

- Variety of media including interactive computer work (individual and group), brainstorming on white boards, hands-on activities and simulation, etc.



LEAN Executive Workshop

Goal:

- To **align** and **motivate** to action the executive group
- To clarify your performance improvement goals

Elements:

- Why must your organization achieve Lean performance
- What is LEAN performance
- How LEAN performance is achieved
- What is an executive's role in a LEAN implementation

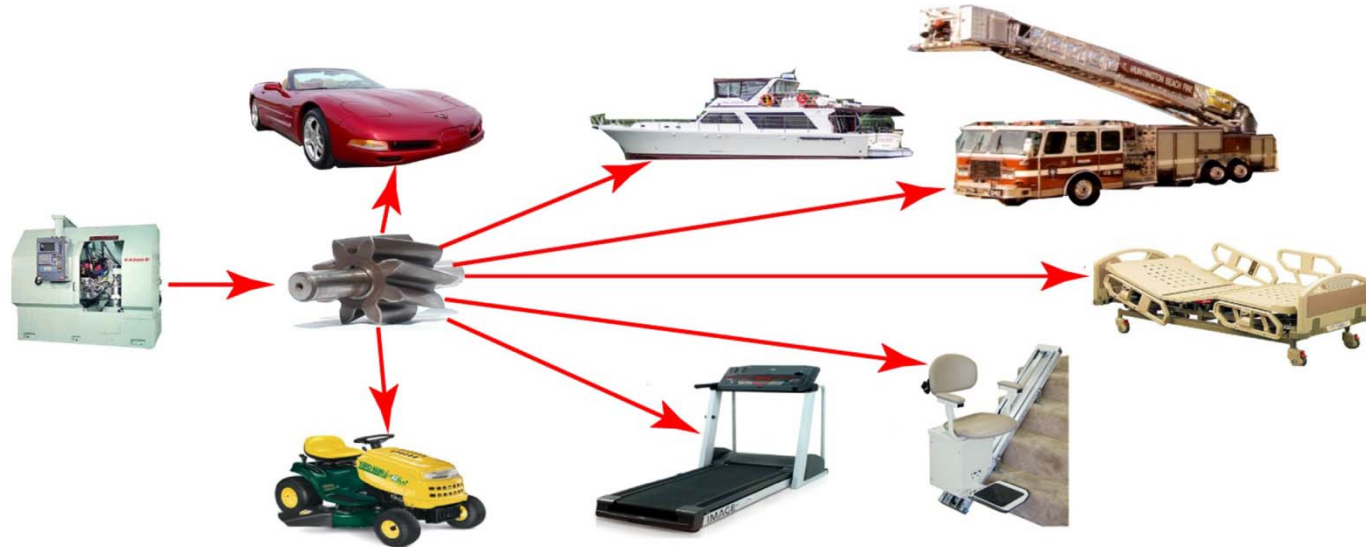


Diversifying your customer base

From this



To this





Market Diversification Deliverables

- Creation of a lead qualification and sales process
- Custom prospect and contact lists
- Development of Value Statements / marketing messages
- Third party market research report
- Training on how Internet search engines work
- A technical website evaluation report
- Training on website analytics and use for sales conversion
- Integration of an actionable sales and marketing strategy



Case study: **Watson Engineering**

Challenge: Efficiently increase production throughput to meet new orders from Caterpillar.

- LEAN Exec
- 3P
- Kaizen

Result: Savings and cost avoidance of \$5.6 million

Chuck and Dave Watson
Watson Engineering
Taylor, MI. 200 employees





Watson success

- Avoided costly addition with cellular layout
- Reduced ship time from 6-8 weeks to 5 days
- Increased inventory turns from 6.5 to 26
- Impressed CAT engineers
- Secured more orders from CAT

**Savings and cost avoidance
of \$5.6 million**



Case study: **Visioneering**

Cari Spears and Kevin Reilly
Visioneering
115 employees

Challenge: Meet AS9100 certification to retain existing sales.

- AS9100 prep training and mentoring
- Internal auditor training

Result: 30% increase in revenue with retention of aerospace customers





Visioneering success

- Certified to AS9100 by registrar on first review
- 30% revenue increase from retained aerospace customers
- With LEAN TPM increased machine utilization by 30%




Case study: **The Cardinal Group**

Challenge: Retaining customer sales and developing new sales leads.

- Market Diversification Boot Camp

Result: 25% percent volume increase in new business

A portrait of Tracy McCullough, a woman with long brown hair, wearing a dark blue polo shirt. She is looking slightly to the right of the camera with a neutral expression. The background is a blurred industrial setting.

Tracy McCullough
The Cardinal Group
60 employees



The Cardinal Group success

- Generated new leads from existing and new customers
- Brought marketing functions inside
- Increased sales volume 25%



Case study: Venchurs

Jeff Wyatt
Venchurs
150 employees



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

- LEAN Kaizen
- Hoshin Kanri deployment

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



Venchurs success

- \$6 million increased and retained sales
- \$350,000 in costs saving/avoidance
- \$78,000 investments in plant, machining and equipment, and workforce development
- 9 jobs increased or retained



for more successes...

Please visit our website at

www.mmtc.org

Thank you.



Client Data Entry

You are logged in as: comphelp@mmtc.org [Logout](#)

[Home](#) : Client Entry

Current Company: Example 1
Current Group: industry
Current Sector: plastic-injection
Data Year: 2008

	Company Values	Percentile
Annual Revenue	\$10,000,000	
Cost of Goods Sold	\$8,926,000	
Purchased Material	\$4,529,000	
Labor and Overhead	\$4,397,000	
Gross Margin	\$1,074,000 (10.74% of Revenue)	10%
Average Inventory	\$1,250,000	
Inventory Turns	7.14	21%
Outside Services	\$158,000	
Utilities	\$287,500	41%
Value-Added	\$5,025,500	
Cost of Scrap (Total)	\$387,500	
Cost of Scrap (Material)	\$127,875	
Cost of Rework	\$100,000	
Scrap and Rework (as % of COGS)	\$487,500 (5.46% of COGS)	20%
Premium Freight	\$6,500	46%
Average Receivables	\$1,450,000	
Days Receivables	52.92	34%
On-Time Deliveries	92.20%	17%
Machine Hours Available per Year	4500	
Machine Hours Running per Year	3225	
Available Machine Hours as % of Hours/Year	51.37%	37%
Machine Run Hours as % of Available Hours	71.67%	46%
Schedule Bumping	15.00%	25%
Annual Employee Turnover	7.50%	92%
Avg. Number of Hourly Employees	76	
Avg. Number of Salary Employees	22	
Average Work Week	45	
Full-Time Equivalents (FTE)	107.5	
Average Hourly Pay	\$11.33	
Value-Added per FTE	\$46,749	26%



TRANSFORMATION PLANNER

Evaluate Growth Opportunity

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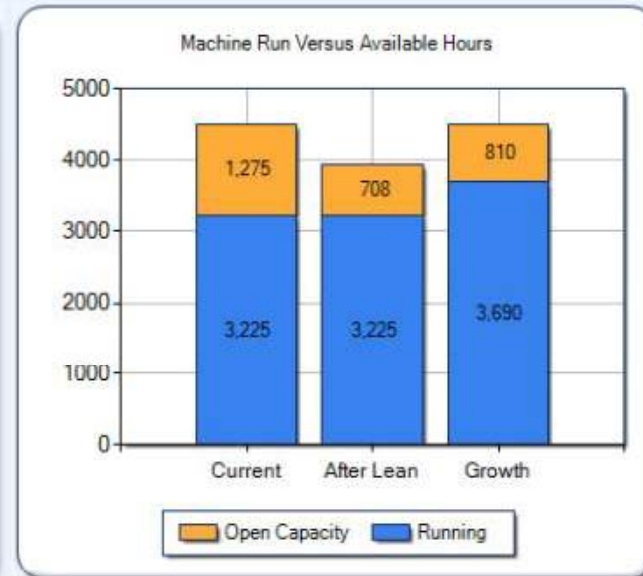
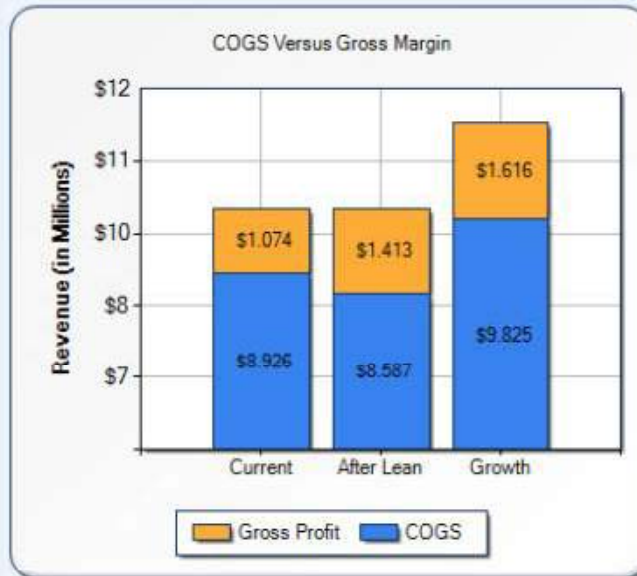
[Home](#) : [Client Entry](#) : [Payoff](#) : [Financials](#) : [Growth Opportunity](#)

Current Company: Example 1
Current Group: industry
Current Sector: plastic-injection
Data Year: 2008

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

Filling Capacity Created by Lean Improvements:

Keeping your shop open 4500 hours per year and achieving the final targets for machine run time, scrap, rework and schedule bumping, your company could fulfill additional orders of: **\$1,441,860**



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Improving Value-Added Performance

Impact of LEAN

$$\frac{\text{VA}}{\text{FTE}} = \frac{\text{Piece Price} \times \text{Number of Units} - \left(\text{Material in Units Sold} + \text{Material Scrapped} + \text{Material in Inventory} \right) - \text{Purchased Services} - \text{Utilities}}{\text{Number of Employees} \times \left(\text{Hours Making Units Sold} + \text{Hours Making Scrap} + \text{Hours Moving Parts} + \text{Hours Doing Administration} \right) / 2080}$$



LEAN Deliverables

- Company/management alignment
- Clearly stated and understandable goals and objectives
- Establishing a LEAN Thinking Approach
- Understanding of benefits
- Applications of LEAN for your company
- A written plan of action
- Project plan stating next steps (18-24 months)



Roles of a LEAN Executive

- **Inspire** the work force (sponsorship)
- **Provide** time and resources to create positive change (commitment, maintaining a planned schedule)
- **Define** and **measure** Lean indicators of success (policy deployment)
- **Communicate** (scorecard, dashboard, recognition, visual management) to all employees
- **Recognize** improvements and contributions



What is LEAN?

A systematic approach applied to the **value chain** aimed at streamlining the business processes by:

Eliminating WASTE utilizing LEAN tools and techniques resulting in:

- Improved **Information** Flow
- Improved **Material** Flow
- Reduced Lead Time
- Increased Capacity
- Improved Productivity



WASTE =the elements of a process that add no value to the product.

Waste only adds **COST & TIME!**



What is Waste?

- The elements of a process that add no value to the product
- **Waste** only adds **COST & TIME**
- Things to remember about Waste
 - Waste is a symptom, not a root cause of the problem
 - Waste points to problems in the system



Benefits of applying LEAN

Percentage of Benefits Achieved

