

Michigan Manufacturing Technology Center
Presents:

Improving Government Using Lean Principles

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Michigan Manufacturing Technology Center

Created for the sole purpose of serving Michigan's small and midsize businesses, the MMTC is a not-for-profit organization of full-time staff professionals, part of the federal Manufacturing Extension Partnership supported by the National Institute of Standards Technology (NIST) - U.S. Department of Commerce.

Our website

www.mmtc.org





Our Mission

To enhance the global competitiveness of small and midsize businesses throughout Michigan.

Our Goal

To make a **significant IMPACT** on our customers, that results in increased profits by reducing costs, increasing sales and creating new jobs.

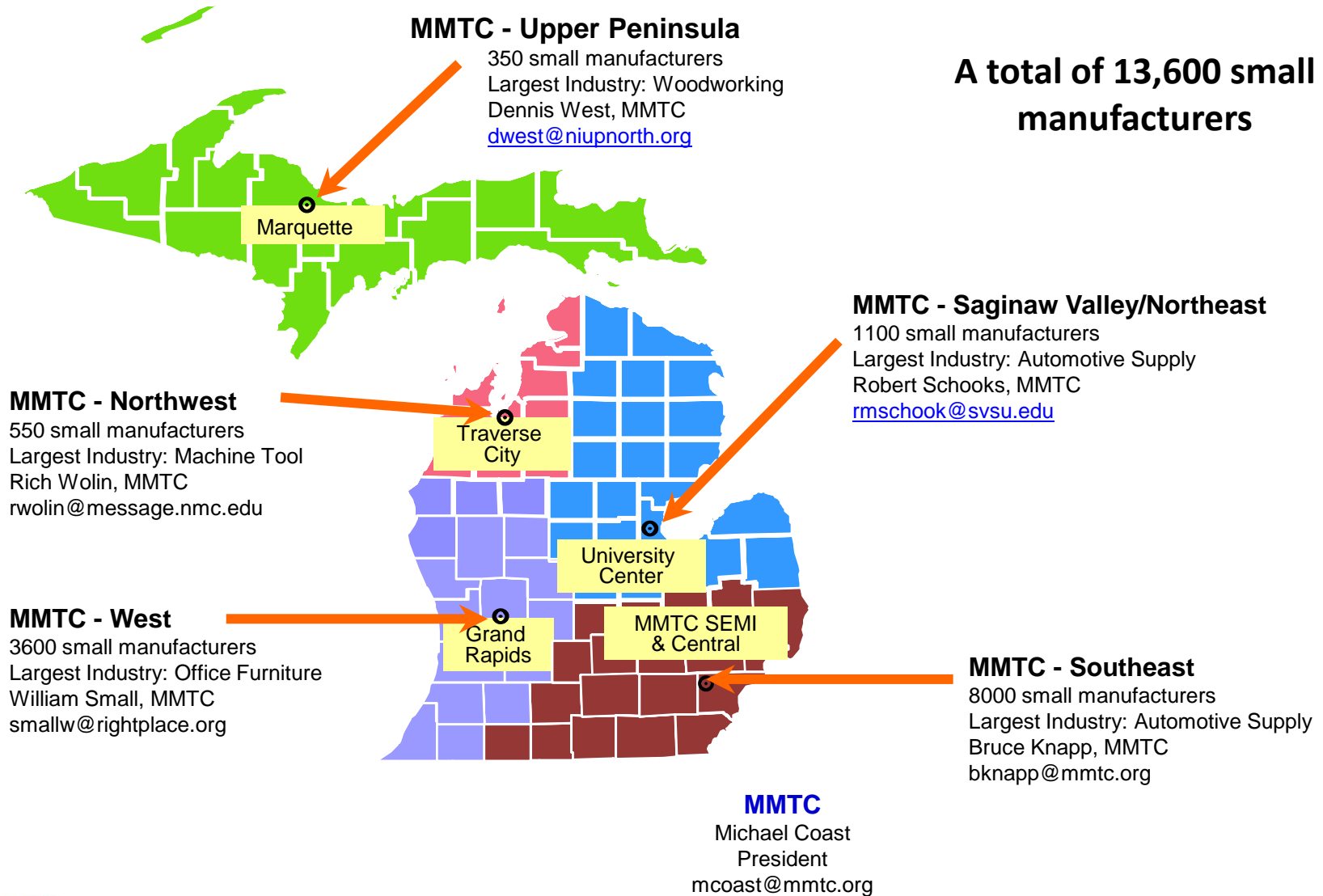
MMTC: Good for Michigan Employers, Good for Michigan

MMTC clients are interviewed by an independent, third-party survey firm (Turner Marketing) one year *after* their project has been completed. 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 and employment.

MMTC Statewide Network





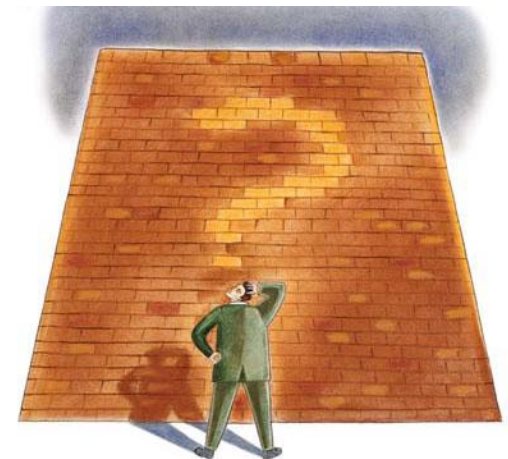
What causes stress in your office processes?

- Long lead times to get information?
- Late quotes/proposals?
- Feel like you are short staffed?
- Too many errors/rework?
- Wasting time on redundant tasks?
- Nothing done the same way twice?



Reasons for the stress

- Too many non-value added steps in the process
- Delays, approvals, inspections, reviews
- Rework because things are not done right the first time
- Lack of understanding about what the customer really wants
- Redundant activities



How can we reduce the stress?

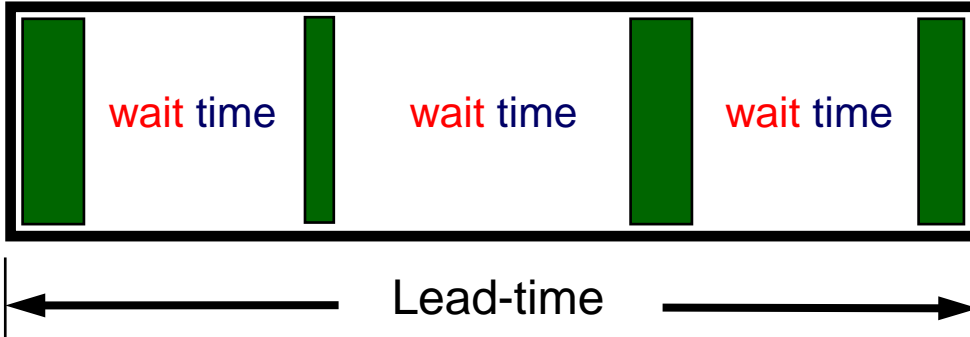
By using a systematic approach applied to the **value stream (flow of information and transactions)** aimed at streamlining the business processes by:

Eliminating WASTE utilizing tools and techniques that:

- Improve Information Flow
- Improve Material Flow
- Reduce Lead Time
- Increase Capacity
- Improve Productivity



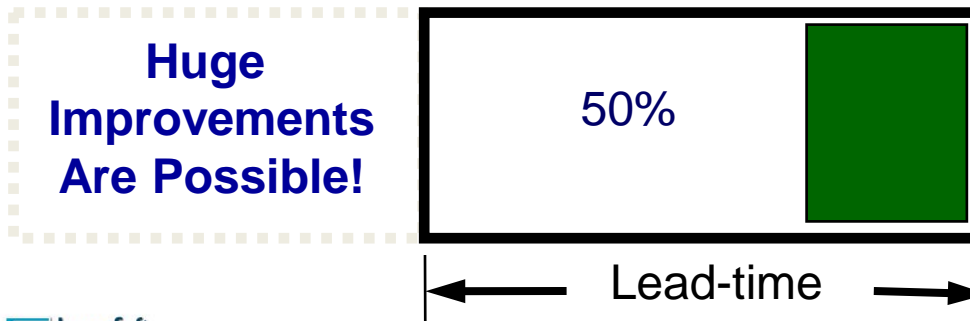
Lean Focus: Shortening the Lead-time



In any process, value added lead-time is a small % of total lead-time, and is scattered throughout the process.

 = Value Added Time

Included in with “wait time” is set-up, handling, order processing, storage, rework, inspection, break-downs, etc.



Typically, companies concentrate on decreasing the 5-7% of value added lead-time rather than attacking the 93-95% of the non-value added lead-time.

What is Meant by “Value Added”?

Value Added Activities

Those activities that deliver a product or create a service or information that meet customer requirements.

1. Work that the customer is willing to pay for
2. Work that physically transforms the product (or document or information)
3. Work that is done right the first time

Non-Value Added Activities

Those activities that consume time, resources or space, but do not add to the value of the product or service or information itself.

Non-Value Added but Necessary Activities

Those activities that do not add value but are **CURRENTLY NECESSARY** (current knowledge or “state of the art”).

Time *is* the Driver

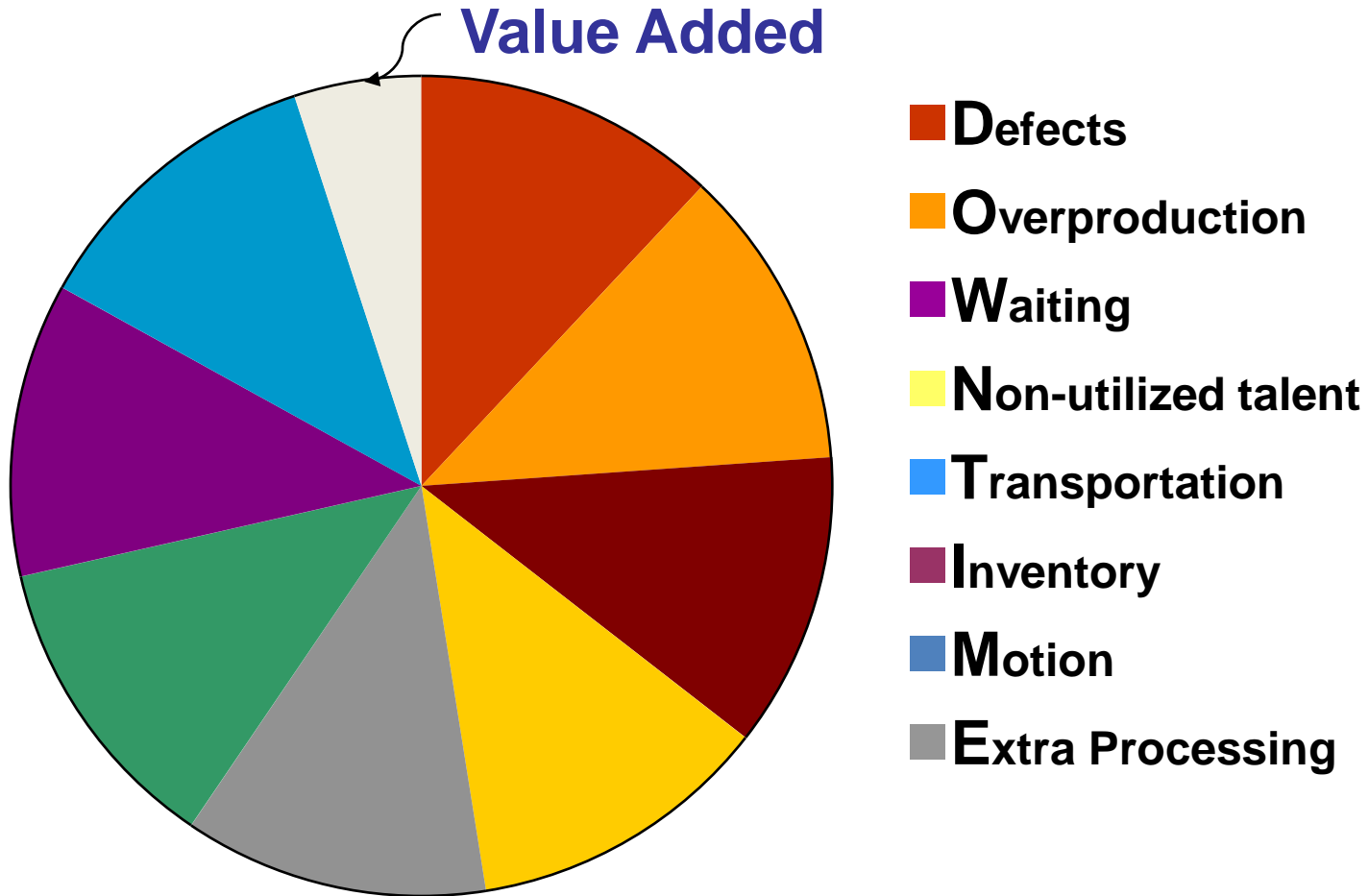
TIME

=

MONEY



New Way of Thinking = Eliminating the Waste or Non-Value Added Activities:



Typically 95% of Total Lead Time is lost to Non-Value Added Activities!

Waste of Defects:

- Money and time are wasted finding and fixing errors
- Rework due to data entry error, pricing error, missing information, missed specifications, lost records

all of these actions waste time that cost money!



Waste of Overproduction:

Time and Money wasted *creating more information than the customer needs.*

- Unbalanced processes
- Sending e-mails/memos to “ALL”
- Printing extra documents just-in-case
- Generating reports no one uses



Waste of Waiting:

- Equipment Breakdowns : fax that does not work or is tied up
- Copy machine that always breaks down
- Missing information
- People late for meetings
- Supplies to arrive
- Management approval signature



Waste of Non-Utilized Talent

- Not asking the people that do the work to be involved in the problem solving efforts
- Lack of skills - employees not properly trained to do their jobs
- Unclear job descriptions
- Unclear job responsibilities
- Lack of synergy and cooperation
- Operating in functional silos



The subject matter expert is not asked for her ideas

Waste of Transportation:

Time and Money lost because of excess movement of information

- Poor Office Layout
- Walking around to correct mistakes
- Walking back and forth to the copier
- Walking back and forth to the fax machine
- Looking for answers
- Getting/searching for signatures



Waste of Inventory:

Time and Money lost by providing more information and material than customer requires

- Extra office supplies that become obsolete or expire
- Files piled up between work desks
- Print Cartridges and/or toner
- Storing of obsolete prints and specs
- Obsolete data bases/files and folders
- Creating unnecessary reports
- Making copies



Waste of Motion and Extra Processing



MOTION

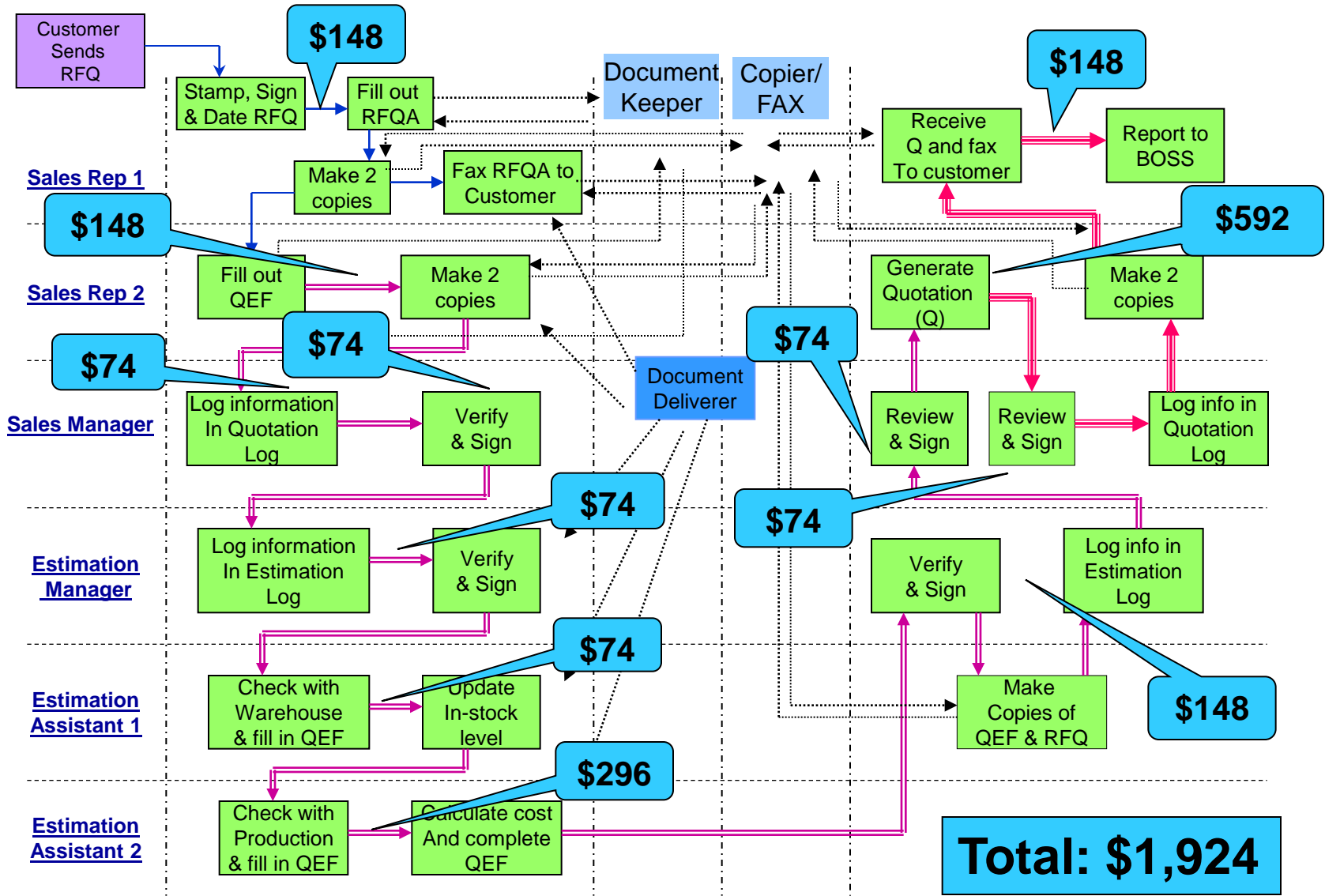
- Time and money wasted by unnecessary movement of people
- Looking for items because they are out of place, unfiled papers, saving files everywhere, not grouping similar orders

EXTRA PROCESSING

- Doing more than is required to meet customer requirements
- Unnecessary paperwork, redundant approvals, unnecessary project reviews

Map of the Traditional Quote Process

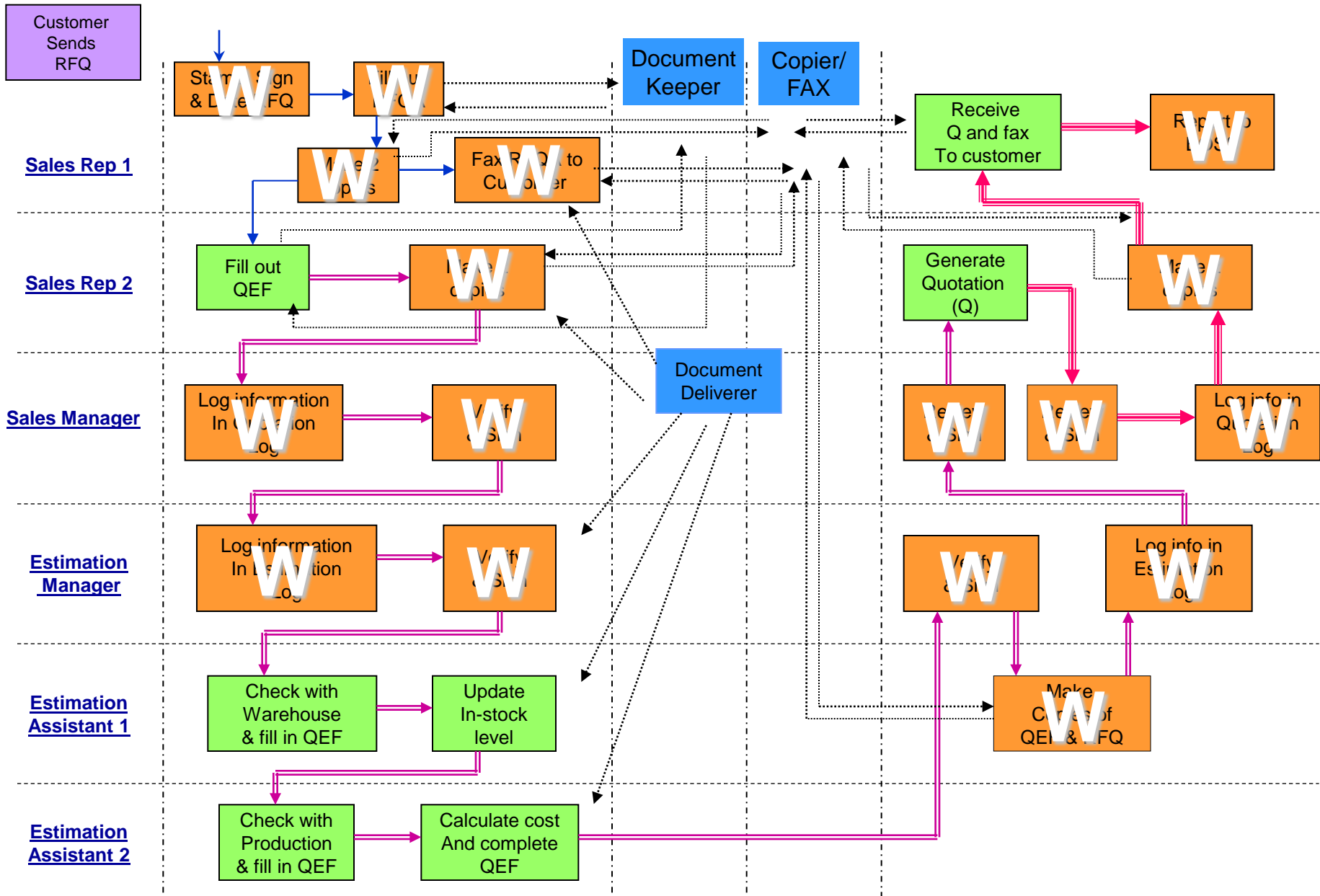
Where is Waste?



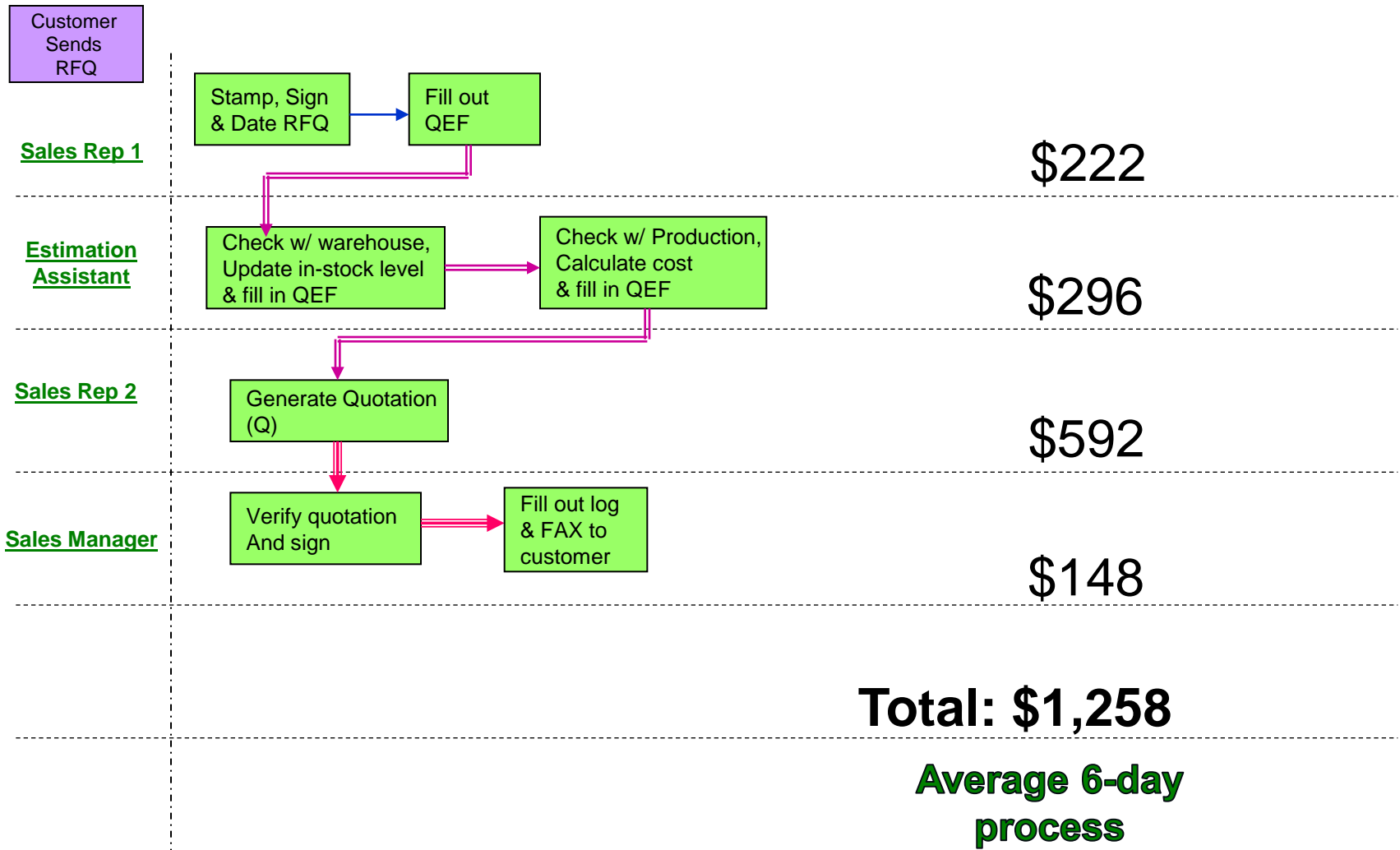
Total: \$1,924

Typical 18-day process

Map of the Traditional Quote Process – Now We Can See Waste



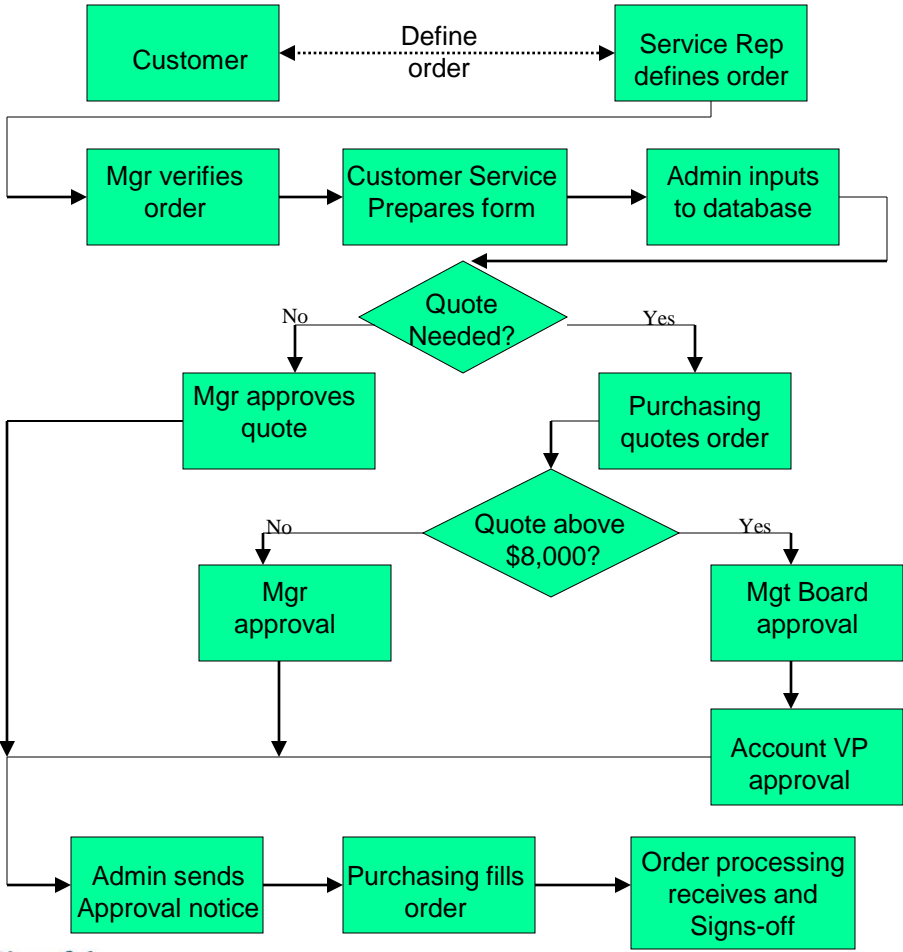
Map of the new Quote Process – **Waste Has Been Eliminated**



Customer Service Request – IT Provider (another example)

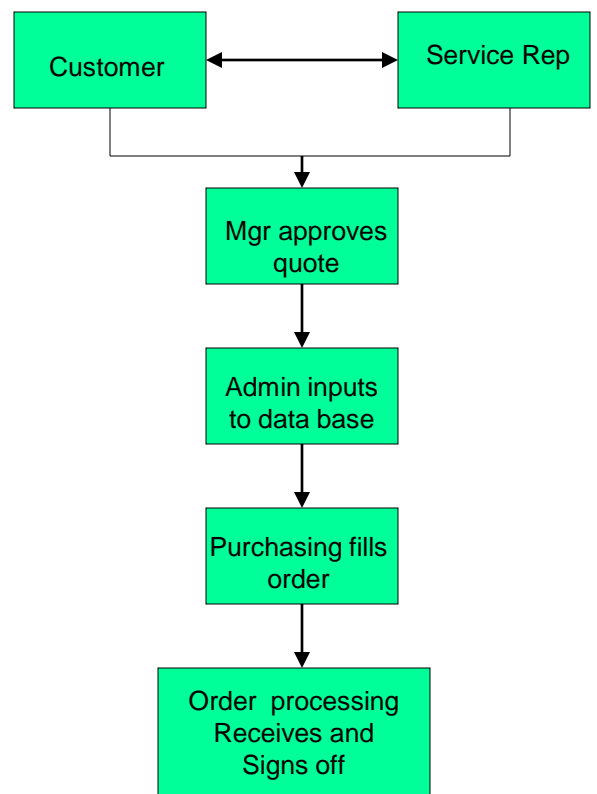


Old Process – Average 50 days



New Process - Average 7 days

Waste removed





Keys to Sustaining Continuous Improvements

- *Standardized Work Methods*
- *5S program*
- *Visual Workplace*

Starts with Standardized Work



- **Standardized Work** is a method enabling employees to improve their control of operations and measure their performance against documented standards
- Performance is optimized by reducing variation and waste in operations by the **EFFICIENT arrangement** of:
 - People
 - Products
 - Machines

AND with an Organized Workplace



A safe, clean, neat, arrangement of the workplace provides a specific location for everything, and eliminates anything not required to do your job.

5-S



Elements of a 5S Program



- **Sort** - Perform “Sort Through and Sort Out,” by placing a red tag on all unnecessary items and moving them to a temporary holding area. Within a predetermined time the red tag items are disposed, sold, moved or given away. “When in doubt, move it out!”
- **Set-In-Order** - Identify the best location for remaining items, relocate out- of-place items, set inventory limits, and install temporary location indicators.

Elements of a 5S Program



- **Shine** - Clean everything, inside and out. Continue to inspect items while cleaning to prevent dirt, grime, and contamination from building up.
- **Standardize** - Create the rules for maintaining and controlling the first 3 S's and use visual controls. (logs, check lists, etc..)
- **Sustain** - Ensure adherence to the 5S standards through communication, training, and self-discipline.

Traditional Office



5S Office



5S Opportunity

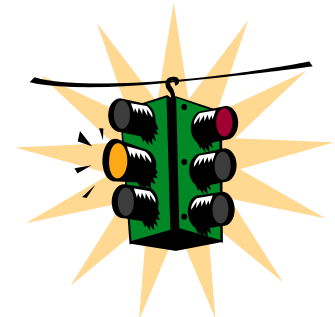


**What's in
the Boxes?**

Utilizing Visual Controls

A Visual Control is a simple **signal** that provide an immediate understanding of a situation or condition. They are efficient, self-regulating, and worker-managed. For example:

- Kanban / Pull System for work priorities and reorder points for office supplies
 - Scheduling board or other visual controls that communicate the order-of-priority
 - Checklist in the supply room
- Color-coded forms, equipment, trays



Visual Controls – Daily Work Input

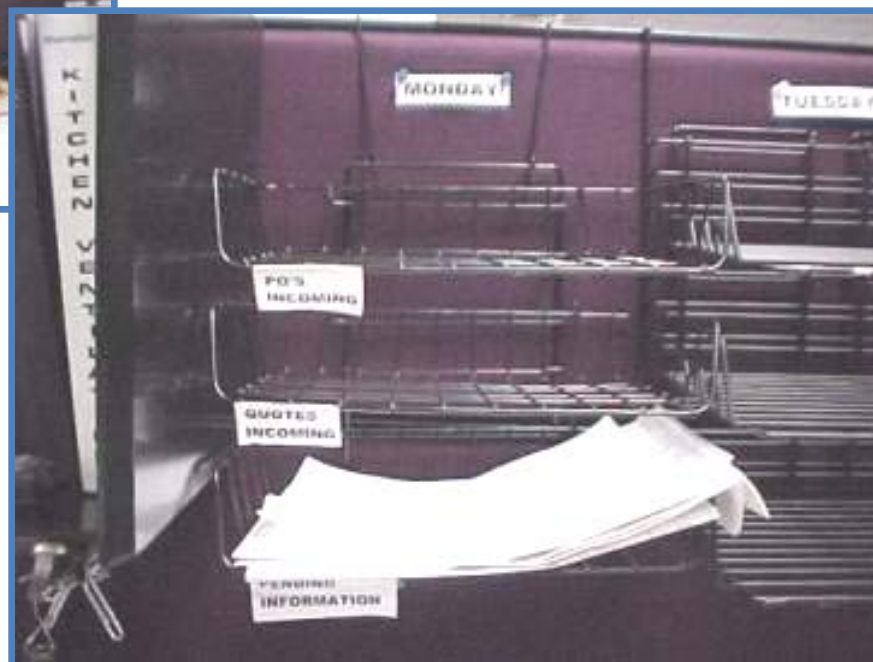


✓ **Creating Flow**

✓ **Setting Priority**



✓ **Scheduling**



Visual Controls - Reorder



Point of Use Storage (POUS)



- Materials stored at the workplace *where they are to be used* -
 - Proper Forms
 - Reference Materials
 - As simple as the HOLE PUNCHER

Example: Training enrollment forms require green, blue and yellow paper. The colored paper was moved from the supply room - next to the printer.

Continuous improvement Effort: We purchased a printer that had 4 trays that gives you the option to print to white, green, blue or yellow paper.

Work Balancing



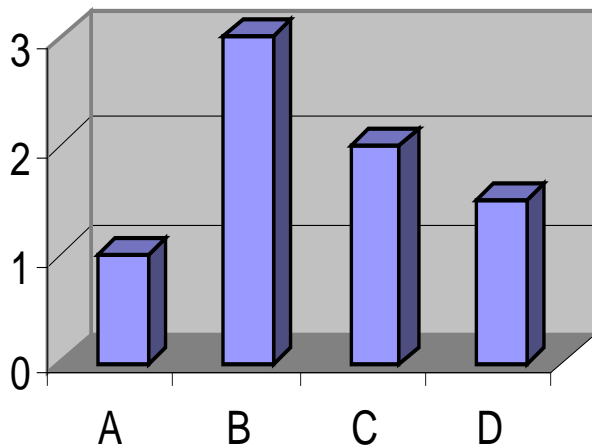
Balance the overall workload among available employees by:

- Observing the sequence of tasks each employee performs
- Breaking the processes into observable elements
- Identifying *value added* versus *non-value added* activities
- Minimize and/or ELIMINATE the non-value added activities

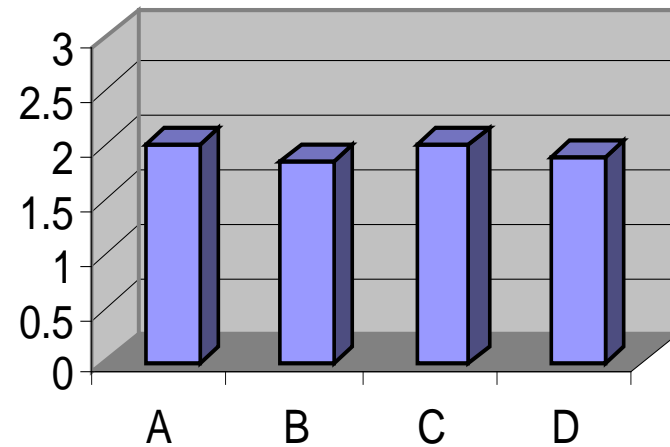
Work Balancing



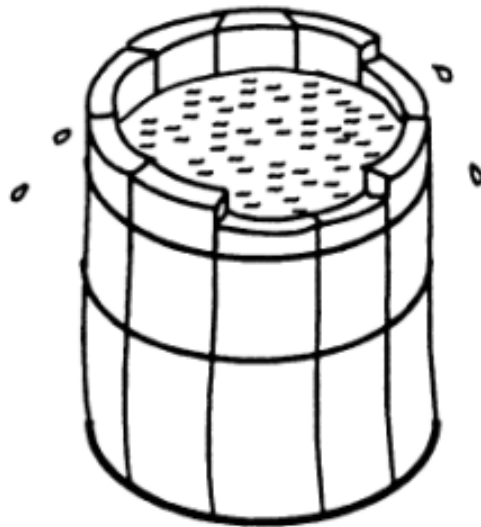
Unbalanced Work



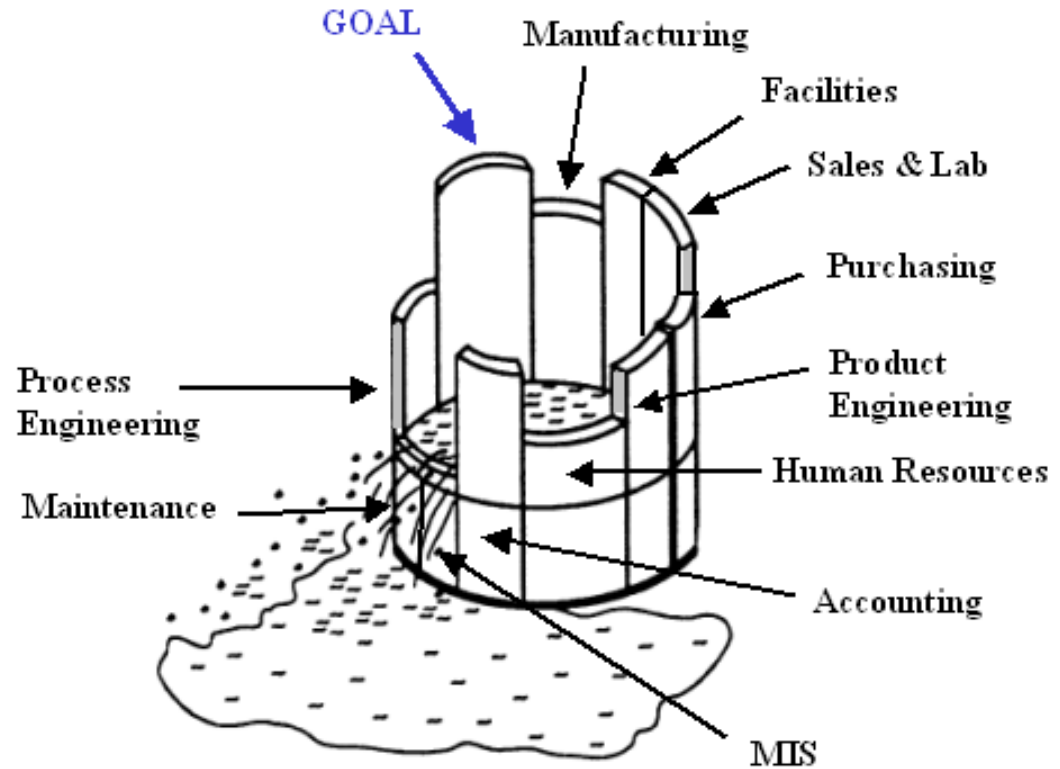
Balanced Work



A Balanced Lean Production System



Good Pail



Poor Pail

Where do you begin to improve office processes?

A New Culture

Creating a New culture is an on-going process of change, which requires:

- Individuals who are willing to accept personal responsibility for their role in the organization as an individual and as a team member.
- A non-blaming, non-judgmental environment.
- Being receptive to change – a **paradigm shift that embraces defects as opportunities, not problems.**
- Everyone's involvement as you move through the **Implementation Plan.**



Office Simulation



- Hands-on learning that will be part of the Office Improvement Kaizen (continuous improvement project)
- Demonstrates waste in the office activities that support the manufacturing operation using transactional situations
- Presents the tools and techniques that can be used to eliminate waste

Process Mapping w/Swim Lanes



- Method utilized to allow a company to visually see the costs associated with the numerous activities that make up the current process
- Process Mapping methodology
 - Create the “current state map” that mirrors your current process
 - Identifies associated cost to complete each major activity
 - Create the “future state map” that will depict the potential improvements and the elimination of wasteful activities
 - Leads to identifying and prioritizing process Improvement Projects



Before

After



Before: 62 Steps

After: 23 Steps

Office Kaizen



- 3 to 5 day Kaizen (Continuous Improvement) Event
 - Focused on implementing the improvement opportunities identified during the assessment and demonstrated by the Value Stream Map and the associated cost
 - Kaizen Event includes:
 - » MMTC staff facilitating a Team of key employees
 - » Creation of visual controls
 - » Documented measurable results

Benefits of “Lean” Office



Reduction in the following areas:

- | | |
|-------------------|--------|
| • Lead Time | 30~60% |
| • Work-In-Process | 30% |
| • Labor Hours | 40~60% |
| • Costs | 20~50% |
| • Space | 10~20% |
| • People Travel | 50~70% |
| • Document Travel | 40~60% |

Thank You Questions?

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Program Manager

Michigan Manufacturing Technology Center (MMTC)

