

# Visual Management and Accountability

{ Growth Strategy:  
Operational Excellence }

# What's In It For You?

## *...from the Group*

- Gain Information
- Meet New People
- Get Free Yummies

# OMEP Overview

- Not-for-profit agency established on 1996
- Mission is to create a stronger Oregon economy by helping small to mid-sized Oregon manufacturers become globally competitive.
- Private-Public partnership funded by federal, state, and client company funds.
- 15 total staff. 10 consulting professionals.

# Delivered Results

OMEP projects are designed to deliver quantifiable results. Six to twelve months after a project is completed, an independent third party commissioned by the National Institute of Standards and Technologies (NIST) surveys clients to measure the project impacts.

For the period  
July 1, 2009 to  
June 30, 2011

<b>Companies Surveyed</b>	<b>108</b>
Jobs Created or Retained	1,720
Increased or Retained Sales	\$129,763,641
Cost Savings	\$17,239,702

# OMEP Client Companies



## Oregon Manufacturing Extension Partnership

Partial list of OMEP projects

### PROJECTS by county

1 Nov 2010

#### BAKER

Behlen Manufacturing  
Blue Mountain  
Cutters Edge  
St. Elizabeth Health  
Tasty Bake

#### CLACKAMAS

Bob's Red Mill  
CCI Enterprises  
CRB Manufacturing  
Flir  
J Frank Schmidt & Sons  
Lightspeed Aviation  
Miles Fiberglass  
Oregon Iron Works  
Pioneer Pump  
Puddin River Chocolates  
SAM Medical  
Skutt  
Web Steel  
WW Metal Fab  
ZXERES

#### CLATSOP

J & H Boat Works

#### COLUMBIA

Composites Universal  
USIA

#### COOS

Hardin Optical

#### CROOK

Consolidated Pine  
Woodgrain Millwork

#### CURRY

Freeman Marine

#### DESCHUTES

Advanced Machining  
American Licorice  
Classic Wood Accents  
Deschutes Brewery

Kialoa Paddles  
Michi Partners  
Nashelle Jewelry  
Northland Furniture  
PV Powered  
Structus  
Suterra  
Vocal Booth

#### DOUGLAS

Alcan Cable  
FCC Commercial  
Furniture

#### GRANT

Malheur Lumber

#### HOOD RIVER

Diamond Fruit  
Homesield  
R&R System Tech  
The Fruit Company

#### JACKSON

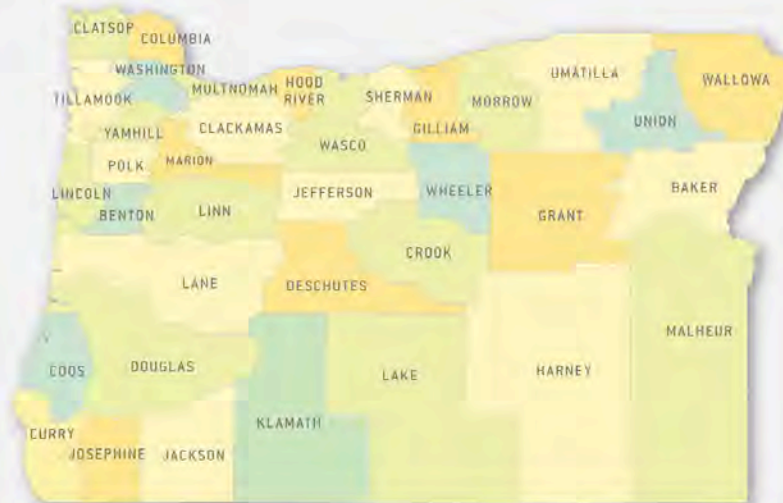
BOC Edwards  
Brammo Motor Sports  
Cascade Wood Products  
Collins Manufacturing  
Diode Laser Concepts  
Highway Products  
ICW  
Lamination Technology  
Marble Creations  
Micro Trains  
Rogue Creamery  
Sabroso  
Sweed Machinery  
Varney Manufacturing

#### JEFFERSON

Earth 20

#### JOSEPHINE

Bentwood  
Encore Ceramics  
Energy Outfitters



Fire Mountain  
Lee's Quality Doors  
Marzi Inc  
Pacific Botanicals  
Recognition Specialties

#### KLAMATH

Collins Products  
MCX Inc  
REACH  
Smith Bates

#### LANE

Bike Friday  
Farwest Steel  
International Door

Marathon Coach  
McFarland Cascade  
Mid Valley Glass  
Newwood Display  
Oak Patch Gifts  
Willamette Valley  
Company

#### LINN

Chalet RV  
Entek Manufacturing  
Flakeboard  
Oberto  
Pacific Cast

#### MALHEUR

Holy Rosary Medical  
Center

#### MARION

Braka Industries  
Cabinet Door Services  
Chemeketa CC  
Columbia Helicopters  
Givaudan/Quest  
GK Machine  
Kerr Concentrates  
Sabroso  
Sequential BioFuels  
Silverton Hospital  
The Trading Company

Truitt Brothers  
Ulven  
Universal Forest Products

#### MORROW

Boardman Foods

#### MULTNOMAH

American Red Cross  
AmFor Electronics  
Ajinomoto Frozen Foods  
Apex Industries  
Applied Plastics  
Badge Print  
Beall Corporation  
Best Manufacturers

Bridgetown Bakery  
Bushwacker  
CCI Industries  
CNH Parts & Service  
Columbia Steel Casting  
Crary Shoes  
Daimler Trucks  
FullBore Innovations  
Georgia Pacific  
Gunderson  
Harry's Fresh Foods  
Hydra-Power Systems  
Imperial Manufacturing  
Indepak  
Legacy Health  
Madden Fabrication  
McTavish  
Moonstruck Chocolates  
Moventas  
Nature Bake  
PGE  
QPM Aerospace  
Scenic Fruit  
Service Steel  
Shed Rain  
Shin Shin Foods  
Sign Wizards  
Speedy Moto  
Stack Metallurgical  
Streimer  
Sulzer Pump  
Sunshine Dairy  
Teeny Foods  
Triad Speakers  
Tube Specialties  
Veris  
Work Systems Inc

WASCO  
Oregon Cherry Growers

#### WASHINGTON

ATAC  
Acumed  
Allied Systems  
B & L Wood Products  
Crimson Trace  
Englander  
Fujimi  
Generic Part Services  
Jewell Attachments  
Kerry Sweet  
Kinetics  
LightSpeed  
Lumber Products  
Northwest Signal  
Poly-cast  
Q & D Manufacturing  
Resers Fine Foods  
Sure Power Industries  
TriQuint Semiconductor  
Vanguard EMS  
Warne Scope Mounts  
Woodfold-Marco  
Welch Allyn Monitoring

#### YAMHILL

A.R.E Manufacturing  
Amerson  
Betty Lou's  
Cascade Steel  
Climax Portable  
Machine Tools  
FMC FoodTech  
Mission Foods  
NW UAV  
Pacific Wood

#### POLK

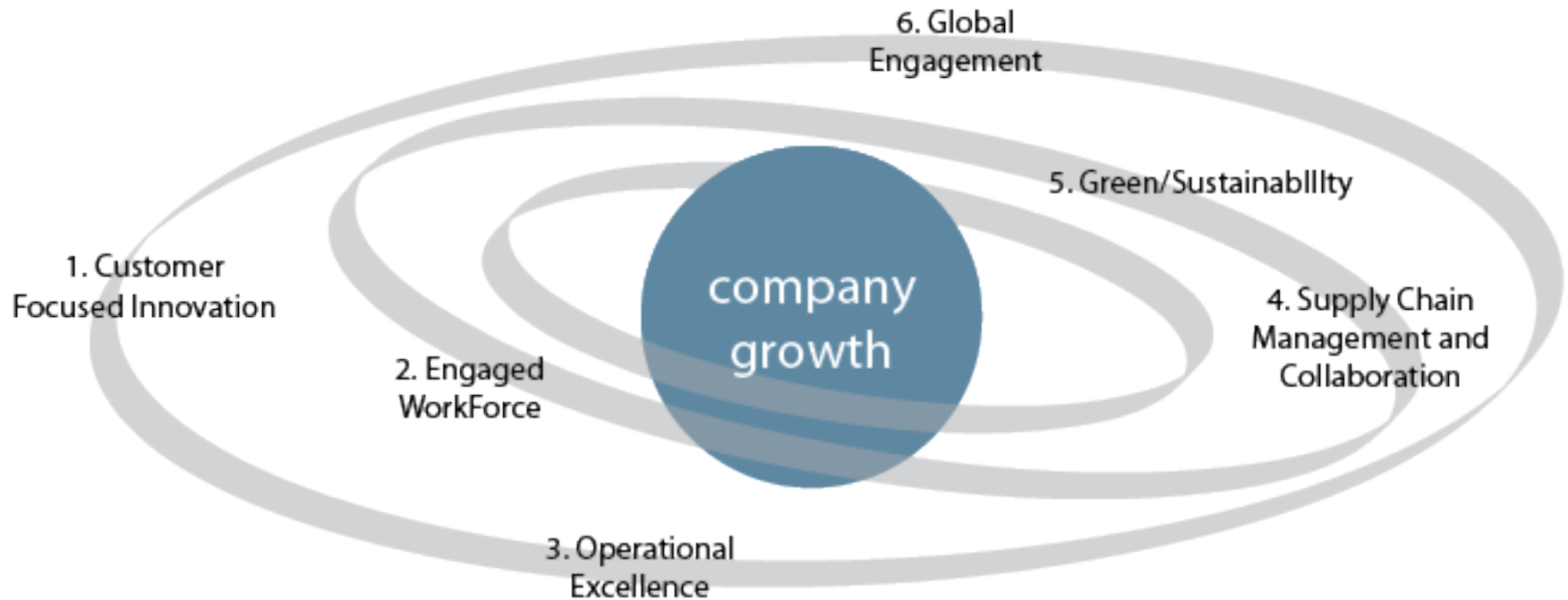
Forest River  
Marquis Spa

#### TILLAMOOK

Halco  
McRae and Sons

# Strategies that Will Grow Your Company

You need to look at all the elements of your strategy at the same time while attempting to synchronize your activity.



# Visual Management and Accountability



# No Flow, Flow, Balance, Take Away





# Operational Excellence

**Exceptional business results and value creation for customers achieved through a desire to:**

- Continually improve
- Engage the minds of all our people
- Effectively deploy company strategy
- Stay ahead of our customers' expectations

***Operational excellence requires focus on both behaviors and results.***

*From Shigeo Shingo Prize Model for Operational Excellence*

# Operational Excellence: Session Notes

- Increased, Improved Capacity
- Improved Quality
- Reduced Friction, Eliminating Roadblocks
- Ability to Deal with the Unknown
- Creativity
- Communication!!!!!!!!!!!!!!!!!!!!!!

# Ideas and Concepts



# Leadership Concepts

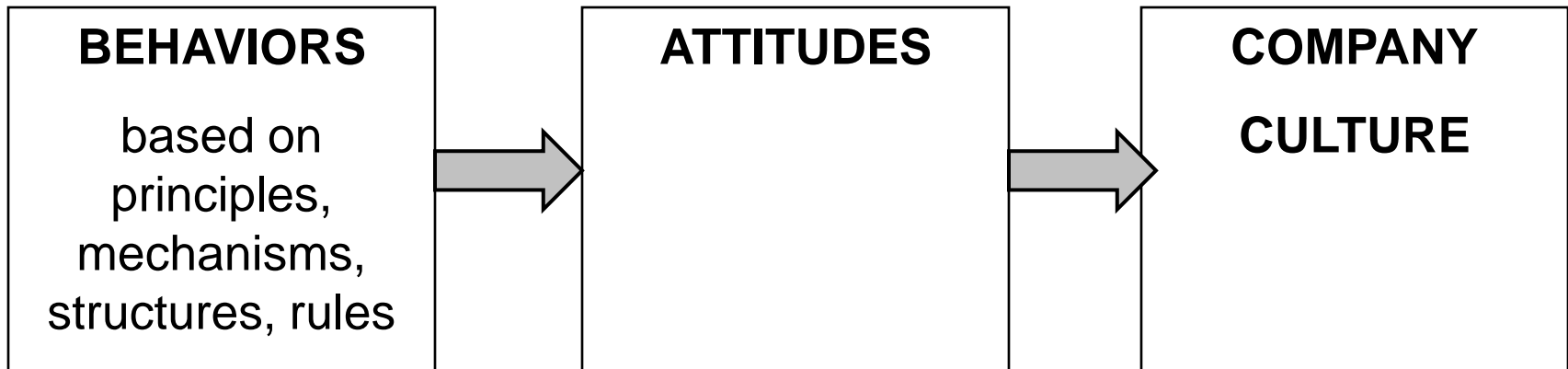
## *Leaders*

Define, align, and communicate *principles* and their corresponding values and behaviors that drive systems

## *Managers*

Define, manage, and improve *systems* and *measures* that drive culture

# Continuous Improvement Culture



“The mechanisms for continuous improvement create the culture of continuous improvement and not the other way around.”

– Mike Rother, “Good System, Good Thinking”

# *Paradigm*

- A Structure
- A Set of Rules
- Guidelines

# *Paradigm “Points”*

- **Paradigm Effect....**
  - “See the world anew” or “View with blinders”
- **Paradigm Shift.....**
  - “Everyone goes back to zero”
- **Paradigm Paralysis.....**
  - “Deadly Disease of Certainty”
- **Paradigm Question.....**
  - “What is impossible to do today; but if it could be done, would fundamentally change the way you do things?”

# Every Person, Every Day

“Every person in the organization needs to be actively applying the tools of continuous improvement within the scope of their daily work - every person, every day.”

*From Shigeo Shingo Prize Model for Operational Excellence*



# Lean Management System

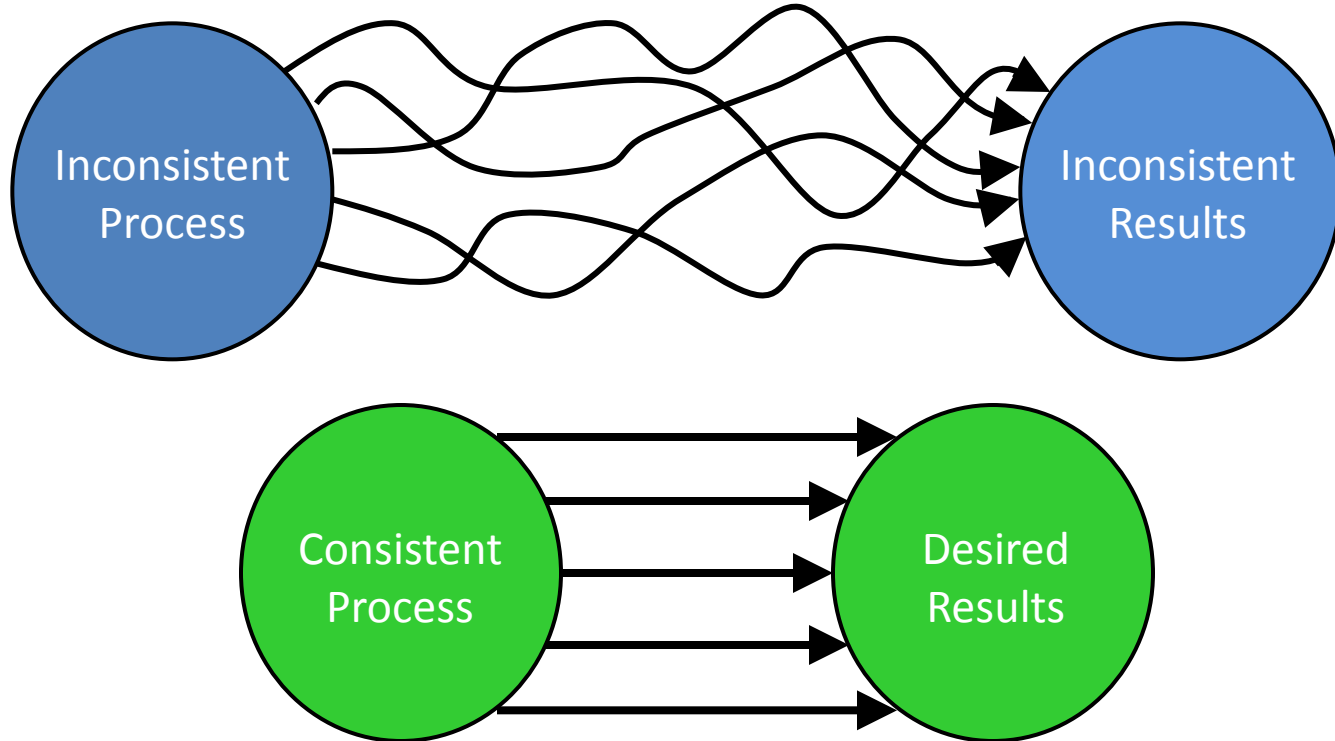
- Standard Work – What should be happening?
- Pace - Are We Ahead or Behind?

## Anchored with Visual Management



# Standard Work

High level definition of tasks required to complete a process



# Standard Work

**Mill Admin Standard Work**

Date \_\_\_\_\_

Completed	Daily Tasks (multiple times)
	Enter/traction orders in DMS
	Order completion (applying material and labor)
	Invoicing
	Receive finished product for corporate programs

Completed	Daily Tasks (once)
	Resolve AP recon P/instl discrepancies
	Resolve shipping and receiving discrepancies
	Process time sheets/Time
	Update vacation calendar(s)
	Process material adjustments for corporate programs
	Process credit returns
	Run branch transfer invoice registers

**Notes**

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Completed	Weekly Tasks
	Update corporate PO's
	Run weekly AP recon report and resolve variances
	Enter/leave off-site PO's

Completed	Monthly Tasks
	Update truck maintenance recaps

**Tasks**

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Completed	Other/Projects
	night training

**Interuptions/Barriers to Flow**




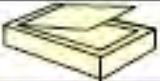
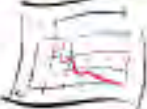
	MON	TUES	WED	THURS	FRI
Purchasing					
AutoFlow support					
Expocite sales orders					
Expocite completions					
Corporate issues					
Office equipment issues					

- Priorities**
1. Safety
  2. Quality
  3. Service
  4. Process Improvement

# Standard Work

	Monday	Tuesday	Wednesday	Thursday	Friday
7:00 AM	✓	✓	✓	Gemba Walk, Update Production Board	
8:00 AM	✓ Monday Meeting	✓ Cycle-Counting Review			
9:00 AM					
10:00 AM					Problems-to-Solve Meeting
11:00 AM				Waterspider Review	
12:00 PM	✓	✓	✓	Check Emails & Place Orders	
1:00 PM	✓	✓		Gemba Walk	
2:00 PM					Weekly Report for Shipping
3:00 PM					
3:30 PM	✓	✓	✓	Update Target Boards & Send Daily Report	
4:00 PM		✓		Continuous Improvement, OMEP HW, Check Emails	

# Standard Work

BEAVERTON CUSTOMER CARE STANDARD WORK	
	Answer phone with: <ul style="list-style-type: none"><li>• Standard open</li><li>• Standard Close</li></ul>
	Enter orders and quotes: <ul style="list-style-type: none"><li>• Customer product orders</li><li>• Acuity systems</li><li>• Government</li></ul>
	Customer e-mail and phone follow-up: <ul style="list-style-type: none"><li>• Expedite orders</li><li>• Order status</li><li>• Pricing, availability</li></ul>
	Scan customer Purchase Orders
	Update "aux time" control chart
5S "Shine"	Maintain 5S at workstation: <ul style="list-style-type: none"><li>• End of day:<ul style="list-style-type: none"><li>○ All equipment returned to equipment area</li><li>○ All manuals returned to proper places</li><li>○ Overhead shelves closed</li></ul></li></ul>

# Visual Workplace

## System Principle #1--Visual Management

Anyone Can Walk in and See:

- The Current Situation (Self-Explaining)
- The Work Process (Self-Ordering)
- If You are Ahead or Behind (Self-Regulating)
- If There is an Abnormality (Self-Correcting)

*You have to SEE the problem before you can fix it*

# Why Visual Management?

Traditional Management	Visual Management
<ul style="list-style-type: none"><li>• Limited communication</li><li>• Limited understanding of individual contribution to business</li><li>• People working in isolation</li><li>• Problems stay hidden</li><li>• Continuous improvement invisible</li></ul>	<ul style="list-style-type: none"><li>• Better communication at all levels</li><li>• Everyone understands business needs and their contribution</li><li>• Teamwork</li><li>• <i>Makes problems visible</i></li><li>• <i>Visible continuous improvement culture</i></li></ul>

# Visual Standard Work

## Operator Standard Work - Component

1	Inspect and complete daily maintenance on machine at start of shift
2	Prep for job by reviewing (and documenting) A. Job paperwork B. Material C. Set-up
3	Run First Part
4	Complete and Document "buddy inspection" of first part as required per QUAS
5	Run parts to job packet Specs
6	Complete and document in process inspection of parts
7	Complete re-cut form to replace any rejected parts
8	Use top and bottom cover sheets when stacking parts on pallets
9	Add color coded move card and routing sheet to each completed pallet
10	Document input material on work order and output quantity on label — list complete job order paperwork
	Notify supervisor of any machine issues throughout the day
	Maintain work area 5S throughout day
	Record issues on work area whiteboard and update status to management

Work Order# \_\_\_\_\_ Inspected By Initials \_\_\_\_\_

**QUALITY**

Size from Call Computer Label (SI, PI, SE, SIAP)

Clean Direction Specified (on/off)

**SETUP**

Material Customer Order  N/A Please Order

Input Quantities Correct

Input Quantities Match

Tool List

Schedule

Output Quantities Correct

Cut Size Clearly Specified

Stock Size Clearly Specified

**WORK AREA PREP**

Select Manufacturing Instructions Address

**INSPECTION/TOLERANCE**

Output Quantities Surface # of Pieces versus # of Assemblies with Supporting Details (e.g. JPH, SPC, etc.)

Program Matches Part Program (e.g. SPC, etc.)

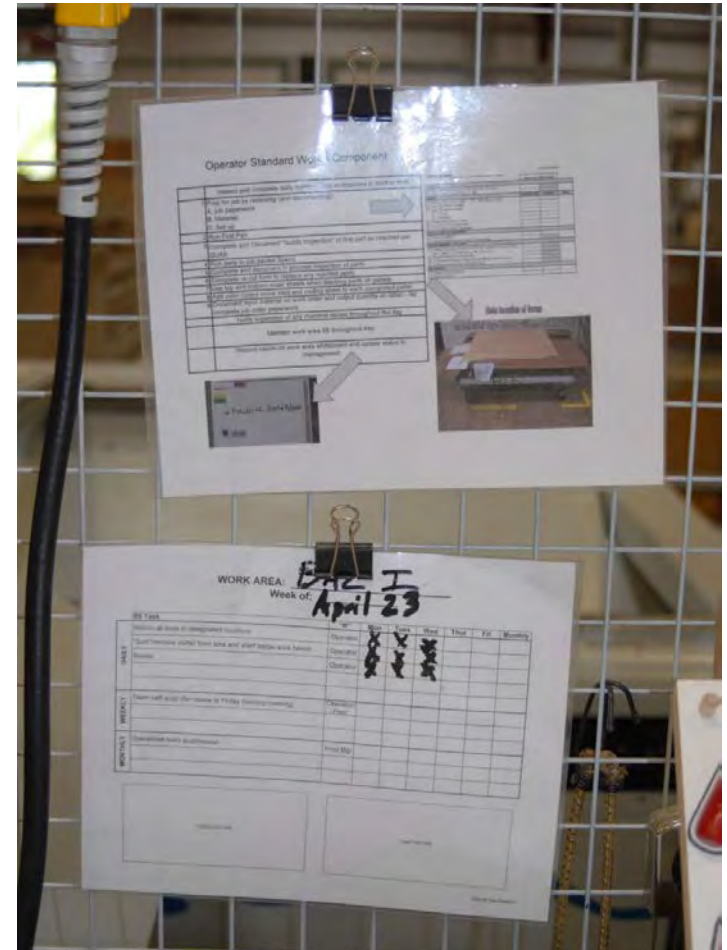
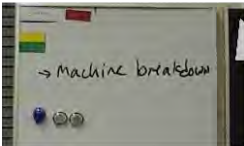
Dimensional Protocol (e.g. Cut to Setting Tolerances)

Tolerances Available (non-standard only)

**MATERIAL**

Stock Status Available

Area Available






# Visual Standard Work



## Supermarket (fed by Material Prep and Waterspider)

Orange part numbers = Material Prep

Blue part numbers = Receiving (waterspider)



Part numbers should not be empty, but can be missing one box for a short period of time




- Boxes cannot be stacked
- Part numbers have assigned places
- Extra boxes remain in the Receiving Warehouse
- If an operator has left-over parts, they go into the next box of the same part number
- The blue coolant basin below should not have extra boxes or parts on it.

200

## Waterspider


**Step 1:**

- Check blue part numbers on supermarket to refill.



**Step 2:**

- Check "Material Prep" bin and take any cards there.




**Step 3:**

- Write today's date on the back of the card in a grease pen

**Step 4:**

- Take all cards for Material Prep. to their "IN" box.



2

# What is a Visual Control?

Anything that enables us to immediately “SEE” problems...  
“What should be happening? What is?”

**Safety performance**  
**On-time performance**  
**Absenteeism**  
**Cross training**  
**Quality performance**  
**Standardized work**  
**Hourly by hour work progress**

**Improvement ideas**  
**Issue resolution**  
**Line stops** **Quantity limits**  
**Locations**  
**Accountability for Leader**  
**Standard Work**

**Almost Anything!**

# Visual Control

## Call Availability Status

**GREEN** – Available

(in the queue)



**RED** – Unavailable

(in AUX or away from desk)



Switch your indicator from **GREEN** to **RED** if you will be away from your desk or in AUX for more than 5 minutes.

(Be sure to change your status to **RED** when you go home for the day!)

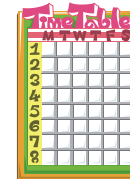
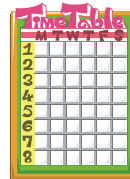
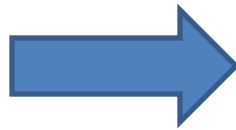
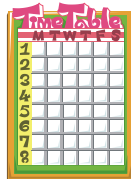
# Visual Control

Avoid “auxing out” in peak times



# Timing and Pace

Parts Per Hour:



Complete by Deadline:



# Schedule



# Schedule

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<del>Voice mail</del>	<del>Voice mail</del>	Voice mail	Voice mail	Voice mail
<del>E-mail</del>	<del>E-mail</del>	E-mail	E-mail	E-mail
<del>Calendars</del>	<del>Calendars</del>	√ Calendars	√ Calendars	√ Calendars
<del>Letters paper/email</del>	Letters paper/email	Letters paper/email	Letters paper/email	Letters paper/email
<del>Assign-Part timer</del>	Assign-Part timer	Assign-Part timer	Assign-Part timer	Assign-Part timer
<del>Time off forms</del>	Time off forms	Time off forms	Time off forms	Time off forms
<del>Schedule Mtgs</del>	<del>Schedule Mtgs</del>	Schedule Mtgs	Schedule Mtgs	Schedule Mtgs
<del>Verification</del>	<del>Verification</del>	Verification	Verification	Verification
<del>PTK Student Qs</del>	PTK Student Qs	PTK Student Qs	PTK Student Qs	PTK Student Qs
<del>BREAK</del>	BREAK	BREAK	BREAK	BREAK
<del>11:00 mail</del>	11:00 mail	11:00 mail	11:00 mail	11:00 mail
<del>Subpoenas/Record Req</del>	Subpoenas/Record Req	Subpoenas/Record Req	Subpoenas/Record Req	Subpoenas/Record Req
<del>LUNCH</del>	LUNCH	LUNCH	LUNCH	LUNCH
<del>Filing</del>	Filing	Filing	Filing	Filing
<del>Check requests</del>	Check requests	Check requests	Check requests	Check requests
<del>Tenant partners</del>	Tenant partners	Tenant partners	Tenant partners	Tenant partners
<del>Enrollment Verf forms</del>	Enrollment Verf forms	Enrollment Verf forms	Enrollment Verf forms	Enrollment Verf forms
<del>BREAK</del>	BREAK	BREAK	BREAK	BREAK
<del>Type up Minutes</del>	Type up Minutes	Type up Minutes	Type up Minutes	Type up Minutes
<del>Order forms</del>	Order forms	Order forms	Order forms	Order forms
<del>Order supplies</del>	Order supplies	Order supplies	Order supplies	Order supplies
<del>Write up process</del>	Write up process	Write up process	Write up process	Write up process
<del>Organize Files</del>	Organize Files	Organize Files	Organize Files	Organize Files
<del>Water plants</del>	Water plants	Water plants	Water plants	Water plants
<del>2:30 Submit Forms</del>	2:30 Submit Forms	2:30 Submit Forms	2:30 Submit Forms	2:30 Submit Forms
<del>Clean Office &amp; Desk</del>	Clean Office & Desk	Clean Office & Desk	4:00 Mtg Fran-Minna	3:00 1A Filing
<del>4:30 Cleanup</del>	4:30 Cleanup	4:30 Cleanup	4:30 Cleanup	4:30 Cleanup

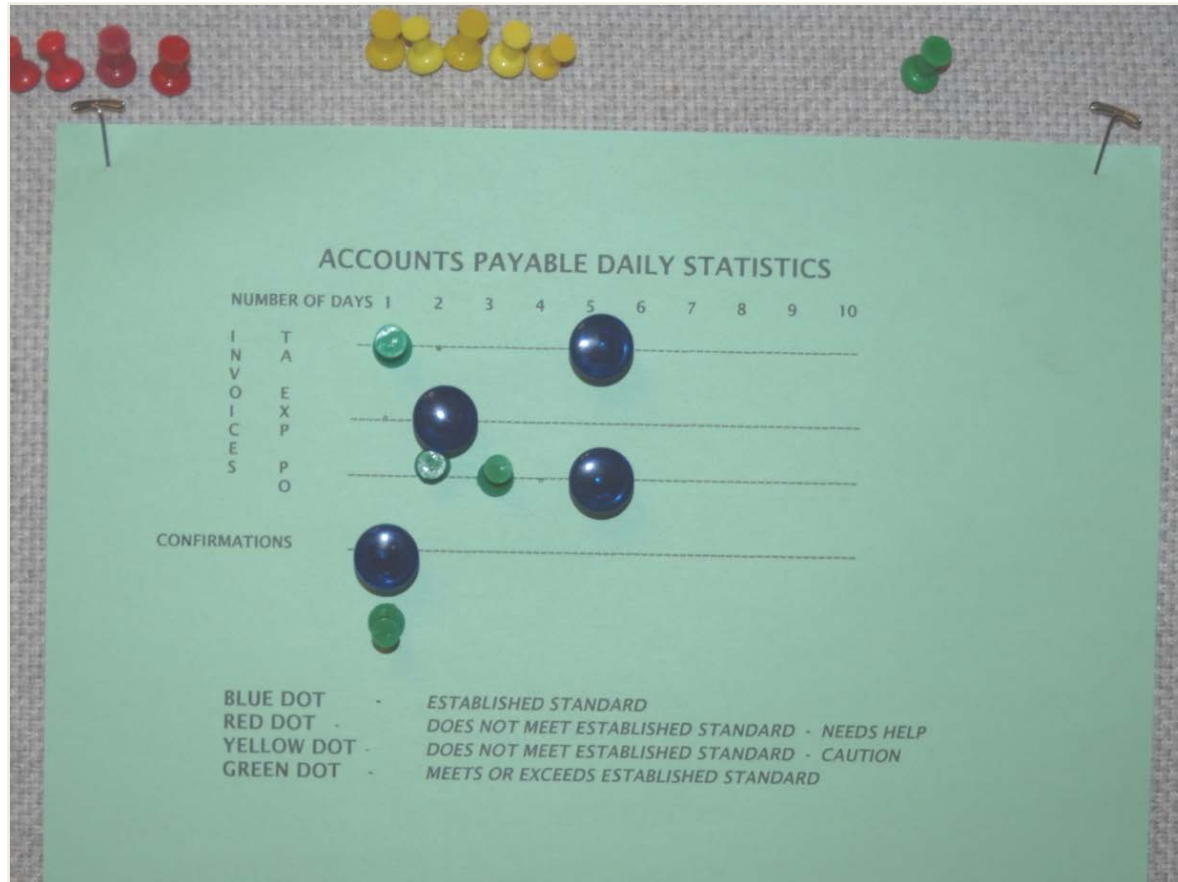
8 Regional Administrative Secretary File

# Schedule/Pace





# Pace



# Pace



# Pace



# Pace



# Pace

Goal	1 week	2 days		3 days	1 week	1 day			
JOB	Date	SO inv.	Approv. Drawing	BOM	CK stock	Pre purch	Del expected	Final Drawing	Notes
0 Custer	6/9	6/10	-	6/10	6/10	6/11	4/10	-	
1 Intereum	6/10	-	-	6/15	6/15	6/15	7/15	-	SHUT & damage
2 Creative Office Pavilion	6/11	6/15	-	6/15	6/15	6/16	4/22	-	SHIP
3 Creative Office Pavilions	6/11	6/15	-	6/15	6/15	6/16	4/22	-	SHIP
4 Custer	6/11	6/15	-	6/15	6/15				
Hospitality Lodging Investors	6/12	6/15	-	6/15	6/15				
The Stroud Group	2/6	○		○	○				



# Accountability

## System Principle #2 -- Accountability

### Daily Meetings

10 minute, Stand Up

### Purpose

Find and solve problems:

- (1) In daily workflow
- (2) In processes



# Daily Accountability

## Agenda:

- **Assessment** – “Plan versus Actual” based on visual controls
- **Assignment** – For corrective action or improvement
- **Accountability** – For having completed the previous day’s assignments

*The primary benefit is to reinforce the lean management system’s focus on process and to implement opportunities for improvement.*

# Daily Accountability

**Warehouse Meeting Agenda**

**Previous Day Performance**

- Issues that need action, assigned ownership?

**Today's Plan**

- Issues that will affect the plan, assign ownership?
- Staffing necessary to meet plan?

**Material Shortages**

- What / Who / When

**Quality Issues**

- What / Who / When

**Process Updates**

**Communication Updates**

**Special Projects**

- What / Who / When

**PRODUCTION STAND UP**  
- START TIME 8:10

**Warehouse Meeting Agenda**

**OPERATIONS MEETING**  
START TIME 8:20

**885 orders**

- **RECAT / RECEIVE ORDER**
  - ↳ RECAT WORK
  - Line-Line Trade with Sellers
  - Reorder with Training to Warehouse (SOP)
  - Process Orders to LT Package
- MCI - Owl
- MCO Prototype Test
- Precision Sheet Metal (finest)

**CONTINUOUS IMPROVEMENT ACTION ITEMS / IDEAS !!!**

- 1) PPS TAPE & MULTIPLE WORKER STANDARDS (REBALANCE / MATERIALS)
- 2) TRAINING MATRIX & CROSS TRAINING PLAN
  - # INCLUDE ALL PROCESSES - PP, WIPER UNDER, REWIND, TAPING, RECAT TEST - RECAT
  - SPECIAL PROJECTS (SALVAGING), SCHEDULING, MTR, DEF, DEPT
- 3) CLEAN UP REFERB RECAT AREA
- 4) ORGANIZE YELLOW TAG AREA
- 5) CLEAR OUT RED TAG AREA





# Daily Accountability

April	2	3	4	5	6	9	10	11	12	13	16	17	18	19
Team Ldr	✓	✓	✓	✓	✓			•		•••				
Grp Ldr	SL		CP	CP	CP	✓	CP							
Area Mgr	NY	NY	NY	NY	MS	PG								
Mfg. Eng.	✓		•	PB										
Materials	DT		DI	DT										
Quality														
Logistics	S			S	=	W	W							
Facilities	MS	SMC	SMC	SMC		MS								
Safety	SM	SM	SM	SM		SM	SM							

Day of month

Actions

Green dot = on time  
Red dot = late

Initials for "checked by"  
support representative

# Improvement Accountability



# Gemba Walk

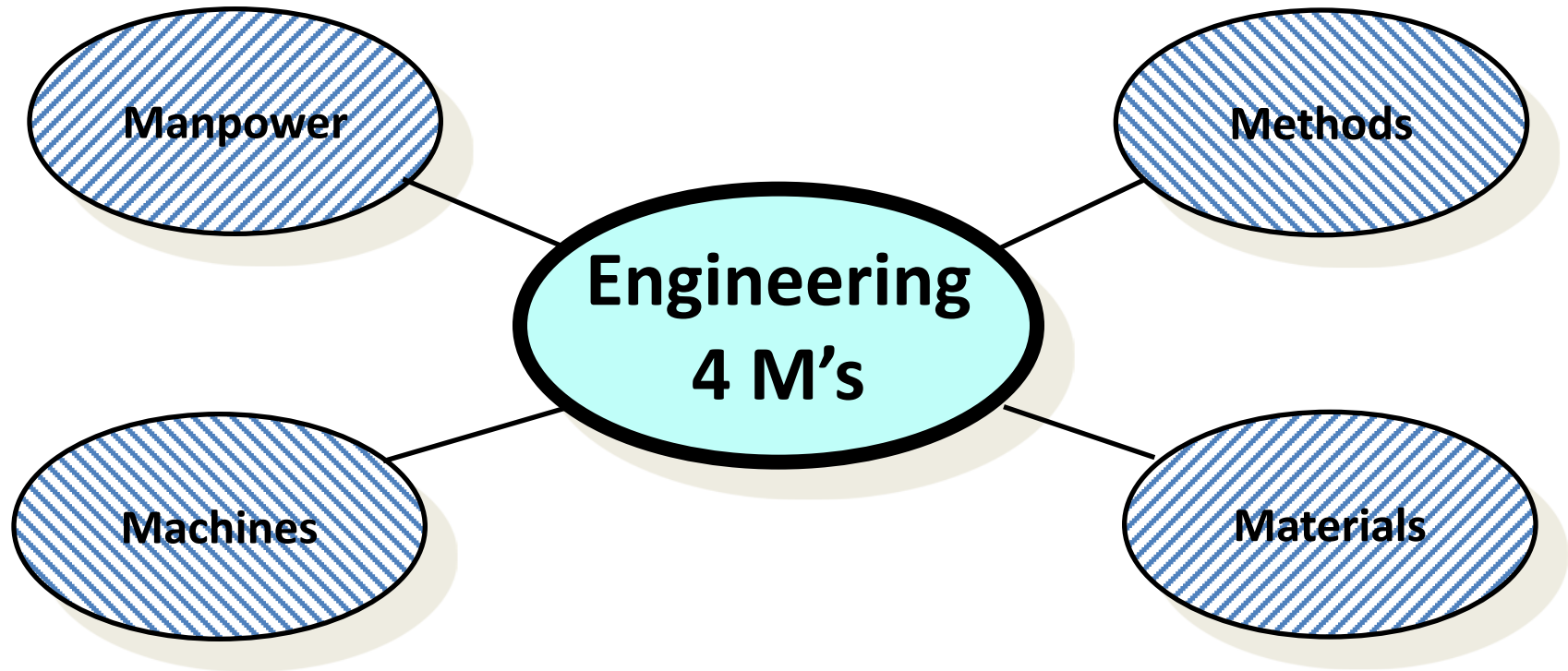
## System Principle #3—Real Time

**Gemba** – “The Real Place”

**Gemba Walk** -- Specific, predictable effort focused on a review of the visual system and facilitation of problem solving related to flow.



# Engineering 4 M's



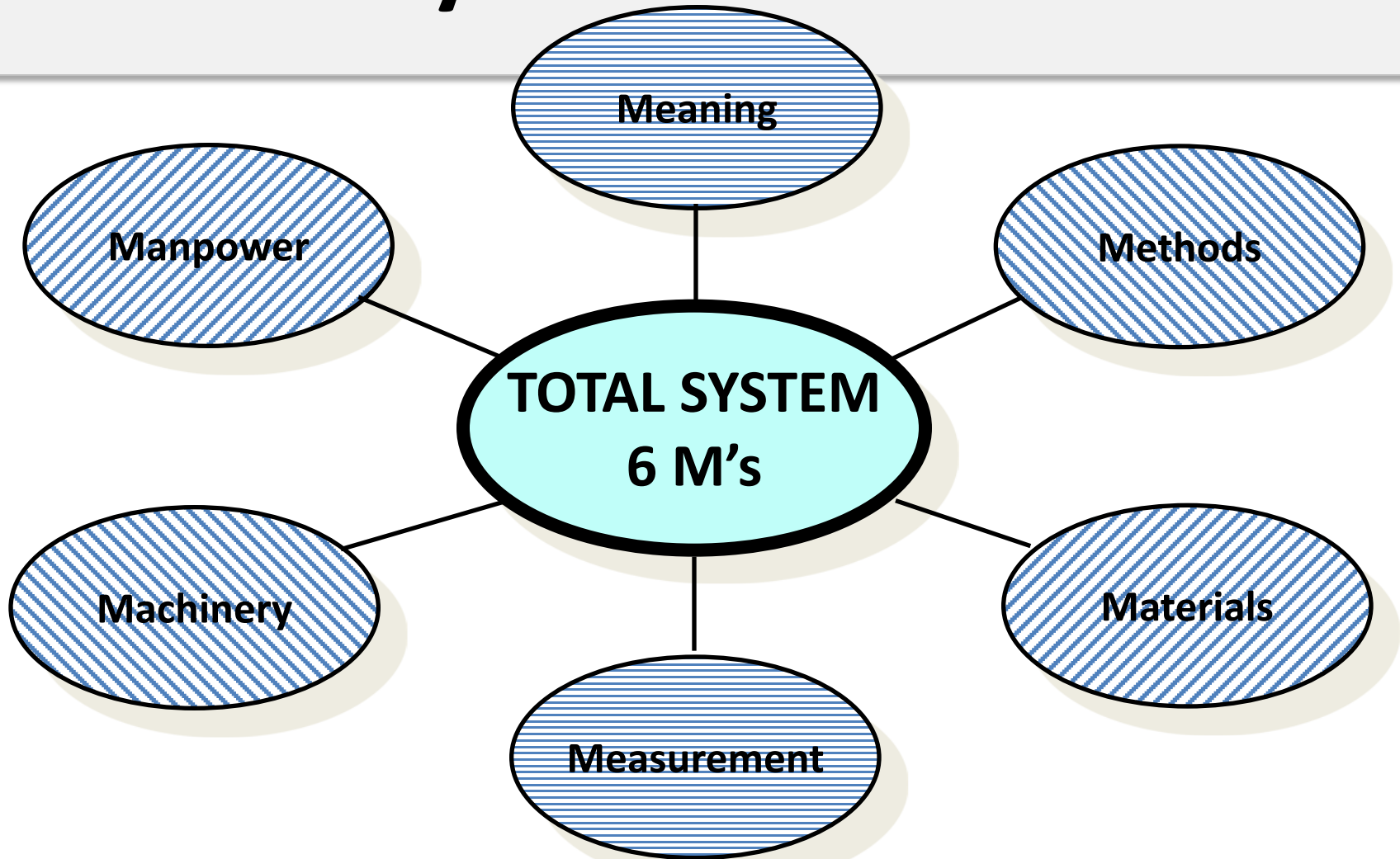
# Engineering 4 M's Breakout

- Manpower
  - People, Teams, Training, Skills, Desire
- Methods
  - Procedures, Protocols, SOP's, Std Work
- Machines
  - Equipment, Facilities, Tools, Energy
- Materials
  - Raws, WIP, Inventory, Product, Resources

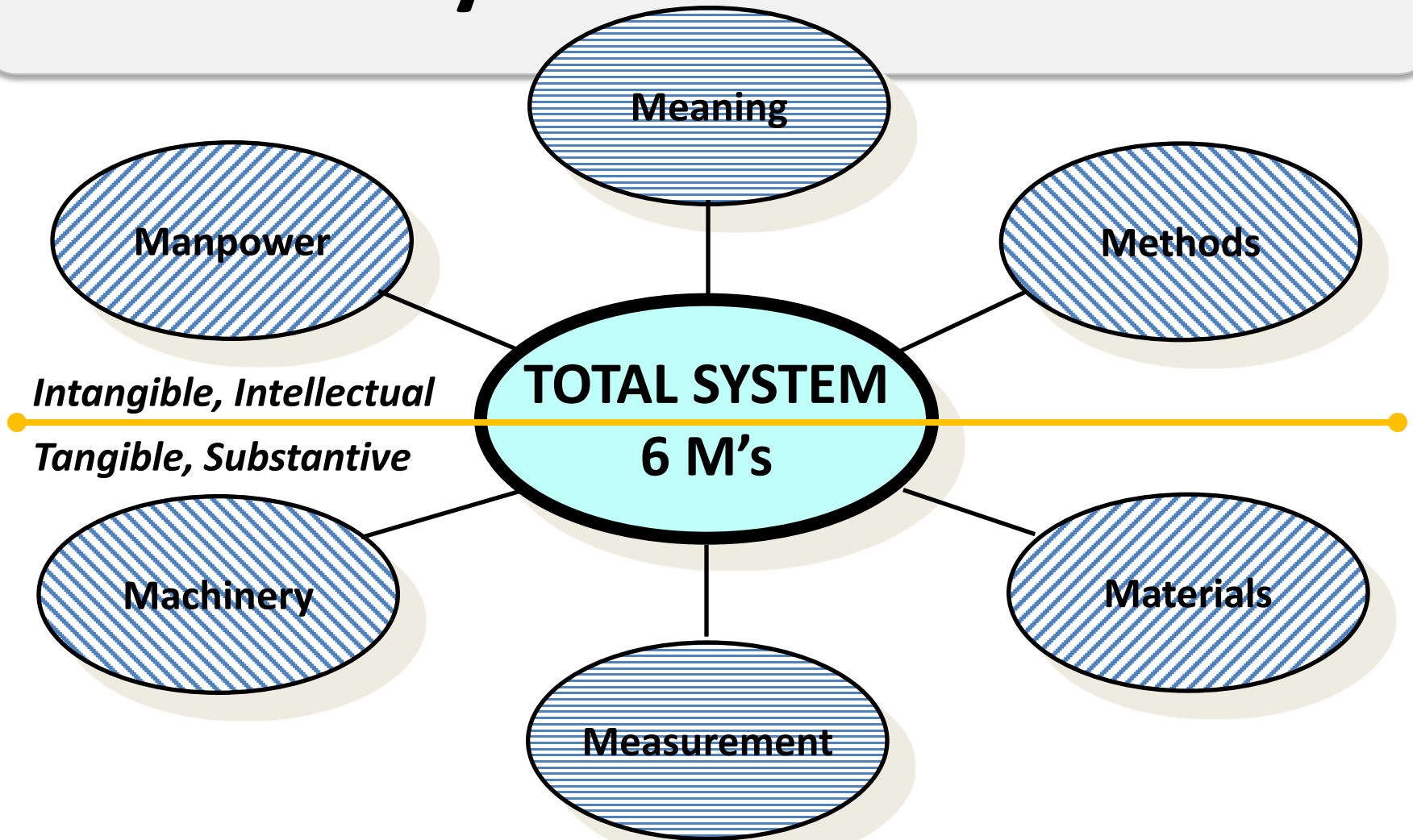
# 4 M's + 2 M's = System Model Thinking

- Meaning = Culture
  - Your True North
  - Organizational Uniqueness
  - Legally, Morally, Ethically
- Measurement = Performance
  - Financials
  - Metrics
  - KPI's, Dashboard

# System Model

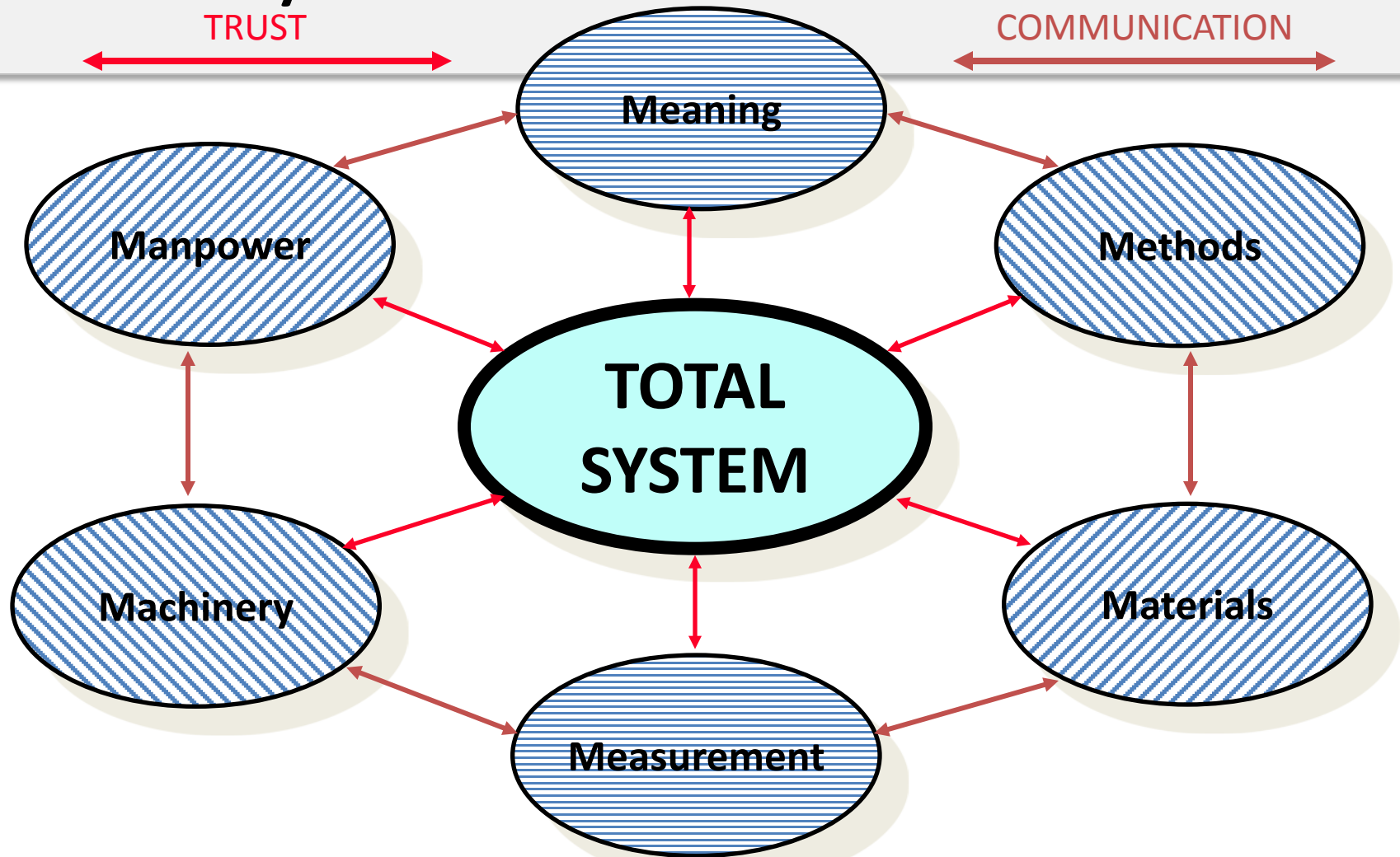


# System Model





# System Model in Action



# System Model from Your Session

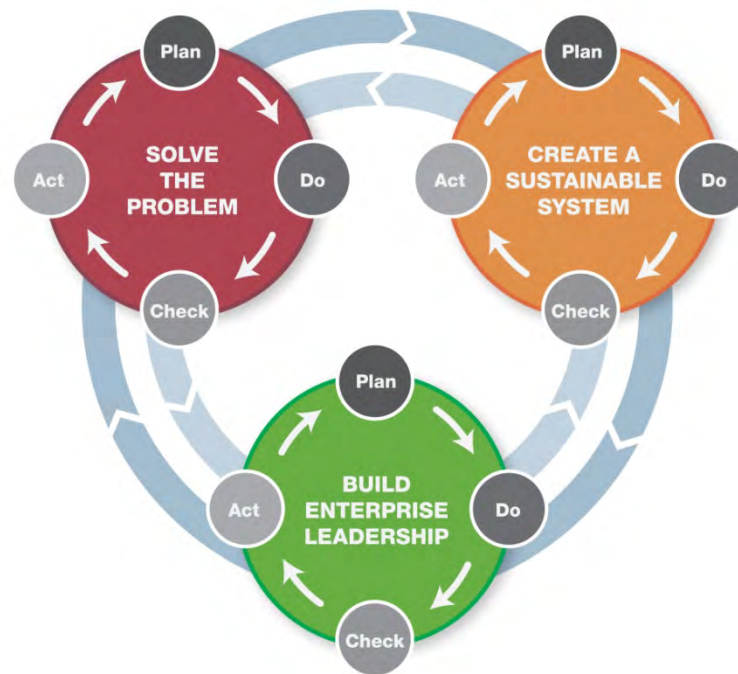


# A Purpose...Beyond the Obvious

## Teaching Moments

- Understanding
- Commitment
- Support
- Fulfillment
- Passion
- Caring
- Enjoyment
- Renewal

# Relentless Systematic Approach



# A Path Forward

Live with intention.  
Walk to the edge.  
Listen hard.  
Practice wellness.  
Play with abandon.  
Laugh.  
Choose with no regret.  
Continue to learn.  
Appreciate your friends.  
Do what you love.  
Live as if this is all there is.

Maryanne Radmacher-Hershey ©1995

# Questions/Comments

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