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DAY TWO
MAKING THE INVISIBLE VISIBLE
REVIEW OF DAY #1

Carousel discussion
• Small groups at stations
• Discuss the topic/question at your first station, scribe top 3 to 5 major points
• Move to next station when time is called
• Repeat
• At last station, review all comments and summarize.
• Report out
DAY #2: Making the Invisible Visible

We Will Cover

• Gemba
• Process Mapping
• Identifying Waste
• Value Add/Non-Value Add
• Interpreting a Process Map
• Metrics and Data Collection
• Root Cause Analysis - Fishbone Diagram
• 5S
• Teams and Team Dynamics
Making The Invisible Visible: Gemba
GEMBA:

“Where the Work Gets Done.”
Process Mapping

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PROCESS MAP

A tool used to display the current process and information from the customer request to the delivery of the product or service to the customer. A picture of the process.
VIDEO:
Process Map

PLAY TIME:
5 mins
PROCESS MAPPING

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Process Map Key

**Function**
Different functions of the process

**Beginning & End Points**
Beginning and end points of the process

**Task**
Any task / activity where work is performed

**Inspect & Decision**
Places where information is checked against established criteria (standards) & decision made on what to do next

**Delay**
Any time information is waiting before the next process or decision (i.e. in-baskets, out-baskets, waiting to be batched)

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Process Map Arrows

- Used between tasks performed by the same person or area, but no physical movement has occurred.
- Indicates physical movement of information/product from one function to another.
- Demonstrates electronic movement of information from one person/function to another.
PROCESS MAPPING: TIPS

• Use the 80/20 Rule
• Use letters, numbers, or stickers to connect loopbacks
• Use different color Post-it notes when mapping multiple groups or use a different space on the map
• Draw lines in with a pencil first before using the marker

• One Voice!
• Write tasks as Noun-Verb/Verb/Noun format
• Stay out of the Weeds!!!!

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PROCESS MAP

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Use SIPOC from Yesterday

Develop a Process Map for Baking Chocolate Chip Cookies

- 1st Step in the Process
- Last Step in the Process
- Functions
- Tasks
- Decisions
- Delays
Always Start with the Process!

DOP Process Mapping – Start with your SIPOC

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DOP PROCESS MAPPING

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VA-NVA-NVAN Waste
Value Added (VA)

Transforms information into services and products the customer is willing to accept

VA Activities Must Meet Three Requirements:
- Done right the first time
- Transformational
- Customer is willing to pay for

*1-5% of the Process

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Non-Value Added (NVA)

- Consumes resources
- Does not directly contribute to service
- Customer does not care
VA, NVA, NVAN

Non Value Added but Necessary

- Customer does not care
- Required to perform the step by current statute or law

“We cut through all the red tape, but a new shipment came in this morning.”

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Transportation
Unnecessary movement of products & materials

Information/Inventory
Unnecessary storage of products & materials

Motion
Unnecessary movement by people (e.g., walking)

Underutilization
Underutilizing systems and people’s skills & knowledge

Waiting
Wasted time waiting for the next step in the process

Overproduction
Production that is more than needed or before it is needed

Over Processing
More work or higher quality than is required by the customer

Defects
Efforts caused by rework, fixing mistakes, and incorrect information
TIM U WOOD

Identifies Waste in a Process

- Transportation
- Motion
- Waiting
- Over Production
- Defect
- Information/Inventory
- Underutilization
- Over Processing

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Interpret A Process Map
INTERPRET A PROCESS MAP

The More you Map….
the more you see common process issues

Red Flags:  
- Multiple Entry Points  
- Several Decisions in a Row  
- Multiple Databases  
- High Level Staff Performing Administrative Work  
- Everything going to a certain section (i.e. Legal, Director, IT)  
- Multiple Reviews, Inspections, Approvals  
- Loop Backs Between Sections, Employees, Functional Areas  
- Different “ways” of doing some thing
What is going on in this map?

Too many functions
What is going on in this map?

Too many delay points
What is going on in this map?

Too many decisions in a row.
ROOT CAUSE ANALYSIS

Symptom:
You see it; people talk about it.

Root cause:
Often hidden…
you need to find it

Defining the “wrong” problem
wastes time. You end up looking
for a solution in the wrong
place.
ROOT CAUSE ANALYSIS

Root Cause
Separates the symptoms from the true cause of the issue or problem.

Root Cause Analysis Tools:

- 5 Whys
- Fishbone Diagram
- Pareto Chart
- FMEA

“It takes too long to get a permit. Therefore, everybody needs to work faster.”
ROOT CAUSE ANALYSIS: 5 WHY’S

Peel back the layers to discover the “root cause” of the problem.
Why is the Jefferson Memorial disintegrating?
We use harsh chemicals and lots of water to clean it...
Why do we use harsh chemicals and so much water?
We have to clean bird droppings every week...
Why do the birds make such a mess?
They go there to eat spiders... there are lots of spiders!
Why are there so many spiders there?
The spiders eat the midges that emerge at dusk
Why do the midges pick the memorial?
They are attracted to the light at dusk
Solution: Delay the lights for one hour after sunset
Result...The midges don’t go to the memorial –
The spiders and bird food supply ends –
Reduced cleaning needed!
FISHBONE DIAGRAM

Late for Work

People
- Children
- Demotivated
- Tired
- Lazy

Method
- Alarm Clock
- Waking Time
- Route to Work
- Distance to Work

Measurement
- Bonus
- Clocking In
- Incentive
- Late for School

Machine
- Coffee Machine
- Car
- Train
- Alarm Clock

Environment
- Traffic Jam
- Fog
- Rain
- Holiday

Materials
- Food
- Clothes
- Petrol
- Electricity

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Making Informed Decisions: Metrics and Data
VIDEO: Wildebeest: Shall We Cross the River?
Making Informed Decisions

1. What data do you need to help you understand the problem or to establish a baseline?

2. What measures will tell you if your improvement is successful?

3. How can you clearly define the measurement of that data?

4. What will you do with that data?

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DATA COLLECTION

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WHERE DO WE GET THE DATA?

• Voice of the Customer
  • Satisfaction, complaints, importance, requirements, lead time

• Voice of the Process
  • Cycle time, lead time, errors, rework, backlog, steps, handoffs, loopbacks

• Voice of the Business
  • Costs, overtime, safety, benchmarks

• Voice of the Employee
  • Satisfaction, suggestions, safety, turnover
LEAN GOVERNMENT MEASURES

1. Simpler
2. Faster
3. Better
4. Less Costly

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VIDEO:
Bush’s Baked Beans

PLAY TIME:
30 sec
OPERATIONAL DEFINITIONS

• An operational definition, when applied to data collection, is a clear, concise detailed definition of a measure
• The need for operational definitions is fundamental when collecting all types of data
• Precisely defines the characteristic and how data collectors measure the characteristic to be sure they have the right one

  • Should be written anytime data is being collected
  • Without them data will usually be inconsistent or wrong
  • It is easy to assume everyone understands
  • Should be documented, standardized, accessible and tested routinely
OPERATIONAL DEFINITIONS:

• Overtime

• Be home by dark

• Late

• Weight

• Backlog

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OPERATIONAL DEFINITIONS

Good:
Response Time = minutes elapsed from application email date/time to decision email date/time

Better:
The response time in minutes will be determined by the date and time of the fax received (as shown on the emailed application), to the time the approval or rejection letter is faxed to the applicant (as shown on the email log)
OPERATIONAL DEFINITIONS

Define a “Sweet”
OPERATIONAL DEFINITIONS

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OPERATIONAL DEFINITIONS

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OPERATIONAL DEFINITIONS

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<table>
<thead>
<tr>
<th>Measure</th>
<th>Operational Definition</th>
<th>Data source and location</th>
<th>Sample Size</th>
<th>Who will collect data</th>
<th>When collected</th>
<th>How collected</th>
<th>Other data to collect at same time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to process application</td>
<td>Email date, time</td>
<td>Applications for XYZ</td>
<td>289</td>
<td>Joe Smith</td>
<td>During the first 2 weeks of the month</td>
<td>Random selection. Use simple spread sheet</td>
<td>Day of week, First time accurate submission</td>
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<tr>
<td></td>
<td>Decision email date,</td>
<td></td>
<td></td>
<td>Tim Mann</td>
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<td>time</td>
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<tr>
<td>Application rejects</td>
<td>Any reason application is rejected</td>
<td>Applications for XYZ</td>
<td>289</td>
<td>Joe Smith</td>
<td>During the first 2 weeks of the month</td>
<td>Random selection. Use simple check sheet</td>
<td>Email date, time</td>
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<td></td>
<td>Tim Mann</td>
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<td>How will the data be used?</td>
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<tr>
<td>Identify average, shortest &amp; longest lead time</td>
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<tr>
<td>Identify number per submitting organization</td>
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<tr>
<td>Look for trends. Day of week, time of submission.</td>
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<td>Identify issues for rejects</td>
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<tr>
<td>Identify # accurate &amp; complete first time submissions</td>
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<tr>
<td>How will the data be displayed?</td>
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<td>Reason</td>
<td>Day 1</td>
<td>Day 2</td>
<td>Day 3</td>
<td>Day 4</td>
<td>Day 5</td>
<td>Total</td>
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<td>Missing Documentation</td>
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<td>Wrong Section Completed</td>
<td>III</td>
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<td>II</td>
<td>III</td>
<td>17</td>
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<td>Old Application Form</td>
<td>II</td>
<td>III</td>
<td>I</td>
<td>I</td>
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<td><strong>175</strong></td>
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</tbody>
</table>
Display Data

Reasons for Application Rejects

- Missing Documentation
- No signature
- No ID #
- No date
- Wrong section
- Old form

Quarter 2

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WHAT METRICS SHOULD YOU USE?

What will tell you if your process is improved?

• Time it takes to do something (Lead time, Process time)
• Errors or defects and rework
• Customer satisfaction
• Backlog of work
• Number of process steps, handoffs, loopbacks, decision points, delays, dedicated staff hours
• Cost savings – to the agency or to the customer

Identify primary and secondary measures to avoid sub-optimization

http://lean.ohio.gov/Portals/0/docs/tools/LeanOhio_MetricsGuide_ver1.pdf

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<table>
<thead>
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<th>Performance Measure</th>
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<tr>
<td>How will data be used?</td>
<td>How will the data be displayed?</td>
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</tbody>
</table>

Page 2-10 in Participant Materials
5S + Safety
5S

Designed to help build a quality work environment, both physically and mentally.

➢ **Sort**—Eliminate what is not needed
➢ **Straighten**—Organize whatever remains
➢ **Shine**—Clean the work area
➢ **Standardize**—Schedule regular cleaning and maintenance
➢ **Sustain**—Make 5S a way of life

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5S

Sort
A place for everything and everything in its place

Set in Order
Clean and inspect or inspect through cleaning

Shine
Make up the rules, follow and enforce them

Standardize

Sustain
Part of daily work and it becomes a habit

When in doubt, move it out – Red Tag technique
Why 5S?

• Survey of over 1000 workers (Adecco)
  • Typical employee spends 2.5 hours a day searching for information
  • 80% of what goes into a filing cabinet is never referenced again
  • a majority of Americans (57%) admit they judge coworkers by how clean or dirty they keep their workspaces
5S - Sort

Eliminate whatever is not needed.
- Sort essential from non-essential items
- Non-Essential “STUFF” includes:
  • Not needed now
  • Not needed here
  • Not needed ever again
  • Not needed in the first place
  • Not needed any more
Red Tag

- Items that need to be removed but cannot be removed right away should be red tagged
- Fill out the red tag information and affix it to the item that needs to be removed
5S – Set In Order (Straighten)

Straighten:
Organize whatever remains

A place for everything and everything in its place.
5S – Set In Order (Straighten)

**Straighten** – What must be kept; make visible and self explanatory so everyone knows where it goes

- Find “BEST LOCATION”
- Organize based on what you use the most
- Store files & tools together if used together
- Make them easy to remove/put back

Create an atmosphere where abnormalities are easy to identify
5S – Set In Order (Straighten)

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5S – Set In Order (Straighten)

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5S - Shine

Shine: Clean the work area

Did you know?
Phone, Water fountain handle, Microwave door handle and Keyboard are the top five most germ-contaminated spots in the office. And, on average, the area where you rest your hand on the desk has 10,000,000 bacteria.
5S - Shine

Shine: Clean the work area

Clean and organize daily
By ensuring everything is clean, it is easier to detect when and where there is a problem
Less likely to be distracted (or get ill!)
5S - Standardize

Standardize: Define the best way and do it consistently

- Create rules and standardize processes
- Make it a habit
- Transform the culture
- Revisit frequently
- Create audits/checklists

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5S - Sustain

Sustain: Make 5S a way of life
5S - Ways to Sustain

• Define how to maintain the best way
• Develop good work habits for the long term
• Monthly area review
• Reminders in staff meetings
• Reward areas
• Recognize improvement
• Annual clean up day
5S - Safety

• Resolve unsafe conditions
• Beware of…
  • Tripping hazards
  • Slip hazards
  • Pinch points
  • Unstable stacks or structures
  • Motorized equipment
  • Toxic materials
  • Loose Clothing
  • …and many others

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5S

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Before

After

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5S Resource

LeanOhio
5s Guide

5S is the name of a workplace organization method that uses a list of five Japanese words: sort, set in order, standardize, and sustain. Transliterated or translated into English, they all start with the letter “S”:

- **SORT**
  “When in doubt, throw it out”

- **SET IN ORDER**
  “A place for everything, with everything in its place”

- **SHINE**
  “Make it clean and keep it clean”

- **STANDARDIZE**
  “If you can’t see, you don’t know, and if you don’t know, you can’t control”

- **SUSTAIN**
  “Maintain the gain”

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Improvement Teams
And Team Dynamics
TEAM

• A group of people working together towards a common purpose

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TEAM WORK

Obstacles?

Things that help?

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IMPROVEMENT TEAM MEMBERS

• Who
  • Core Team Members: People who do the work or supervise the work
  • Team Leader
  • Process owner
  • SME’s
  • Fresh Perspective
  • Perhaps Customers
• Ideal team size 5-8 core members
OBTKAINING TEAM MEMBERS

• Define roles or functions needed on team
• Follow Chain of Command
• Define Expected Time Commitment
• Functional Areas and Expertise Needed
• Customer Representation
• Clear and Common Goals
• Defined Roles
• Clear Agreed Upon Procedures
• Understanding Interpersonal Dynamics
TEAM LEADER ROLE

• Manages the project and the team
• Primary contact point
• Keeps the team and project records
• Solicits help from the project sponsor to overcome project barriers
• Assists with team conflict resolution
TEAM SPONSOR/CHAMPION ROLE

- Someone in leadership who has the ultimate authority to implement changes
- Signs off on Team Charter
- Helps remove barriers
- Helps provide resources (time, SME’s, etc.)
- Needs to be kept in the communication loop
• Process owner is the team member who is responsible for seeing that the project gets implemented

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FACILITATOR ROLE

• “Outsider” – neutral person
• Provides process and tools expertise
• Focuses on process NOT content
• Engages and Guides the team

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DO YOU NEED A FACILITATOR?

• Do you have a large project? Does it cross multiple sections or units or departments?
• Do you have a large team?
• Is the topic potentially controversial?
• Is this your first improvement project?
• Do you need group management expertise?
• Do you need process and tools expertise?

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OTHER ROLES

**Fresh Perspective:** An outside person who is a full team member but knows nothing about the process being improved

**SME:** A “part-time” member of the team called upon for specific expertise

**Customer:** The recipient of the product or service

**Stakeholder:** Those who have an interest in the process
TEAM PROCEDURES

• Ground Rules
• Meeting Management
  • Agenda
  • Distribute pre-work before meeting
  • Start and end on time
  • Action registers
  • Clear and simple minutes
• Decision-making methods
• Problem-solving methods
• Communication protocols
TEAM DYNAMICS

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TEAM PERFORMANCE

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SUCCESSFUL TEAM TIPS

- Ground rules
- Clear team goals
- Improvement plan
- Defined roles
- Communication
- Respectful team behavior
- Clear decision-making procedures
- Equal participation
MEETING MANAGEMENT: AGENDAS

<table>
<thead>
<tr>
<th>TIME</th>
<th>TOPIC</th>
<th>OUTCOME</th>
<th>WHO AND/OR HOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 min</td>
<td>Check-in, review agenda</td>
<td>Ready for work!</td>
<td>Leader</td>
</tr>
<tr>
<td>10 min</td>
<td>Review pre-work</td>
<td>Informed</td>
<td>Jim-Bob</td>
</tr>
<tr>
<td>20 min</td>
<td>Discussion of XXX</td>
<td>Decision</td>
<td>Sam/Force-field analysis</td>
</tr>
<tr>
<td>10 min</td>
<td>Brain storming on YYYYYY</td>
<td>Ideas for solution</td>
<td>Jane</td>
</tr>
<tr>
<td>5 min</td>
<td>Next Steps</td>
<td>Assignments</td>
<td>Leader/Action register</td>
</tr>
<tr>
<td>5 min</td>
<td>Evaluate meeting</td>
<td>Improvements</td>
<td>Leader Plus/Delta</td>
</tr>
</tbody>
</table>

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# Team Meeting Minutes

**Meeting/Team Name:**

**Date:**

<table>
<thead>
<tr>
<th>Time</th>
</tr>
</thead>
</table>

**Attendees:**

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>DISCUSSION</th>
<th>DECISIONS/ ACTION ITEMS</th>
</tr>
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<tbody>
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END OF DAY

- Questions
- What Went Well
- Lessons Learned

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