PROCESS IMPROVEMENT FOR THE LAB

Leveraging LEAN principles to drive Efficiencies and Productivity
OVERVIEW

• Group Exercise
• LEAN principles overview
• Case Studies In-lab perspective
• Q&A
EXERCISE

At your tables discuss your experiences in driving greater process improvement.

• What have you tried?
• What’s worked?
• What’s failed?
PROCESS IMPROVEMENT FOR THE LAB

PROCESS IMPROVEMENT

THE FIRST STEP IS TO IDENTIFY YOUR PROBLEMS.

WE DON'T HAVE ANY PROBLEMS. WHAT'S THE SECOND STEP?

MUST... CONTROL... FIST.

I HOPE SOMEONE GIVES ME A BELT.
LEAN defined

• The Lean methodology relies on 3 very simple ideas:

  • deliver value from your customer’s perspective
  • eliminate waste (things that don’t bring value to the end product)
  • continuous improvement
Benefits of LEAN Management

Better use of resources
Smarter process
Improving productivity & efficiency
Focus
The 5 Basic LEAN Principles
The Paradox Of Value
Exchange Value VS. Use Value
Identify Value
Value Stream Mapping
Create Continuous Workflow

- breaking down steps
- reconfiguring the production steps
- leveling out the workload
- creating cross-functional departments
- training employees to be multi-skilled and adaptive
Just in Case vs. Just in Time

Push vs. Pull

Store as much as we can

Production Approximation
- Anticipated Usage
- Large Lots
- High Inventories
- More Waste
- Poor Communication

Store just what we need

Production Precision
- Actual Consumption
- Small Lots
- Low Inventories
- Less Waste
- Better Communication

Establish Pull
Continuous Improvement

THE CONTINUOUS IMPROVEMENT CYCLE

IDENTIFY
Opportunities in the process workflow.

PLAN
How can the current process be improved?

EXECUTE
Implement changes.

REVIEW
How changes working for the team?
### 5s LEAN WORKPLACE

<table>
<thead>
<tr>
<th></th>
<th><strong>1. SORT</strong></th>
<th>Organization - keeping only what is necessary and discard everything else - when in doubt, throw it out</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>2. SET IN ORDER</strong></td>
<td>Orderliness - arranging and label only necessary items for easy use and return by anyone</td>
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<tr>
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<td><strong>3. SHINE</strong></td>
<td>Cleanliness - keeping everything swept and clean for inspection - for safety and preventative maintenance</td>
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<td><strong>4. STANDARDIZE</strong></td>
<td>Standardized cleanup - the state that exists when the first three pillars or “5’s” are properly maintained</td>
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<td><strong>5. SUSTAIN</strong></td>
<td>Sustaining the discipline - making a habit of property maintaining correct procedures</td>
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**Plan Do Check Act**

PDCA: Plan-Do-Check-Act

PDCA stands for Plan-Do-Check-Act. It is a cyclical method for continuous improvement of processes.

- **PLAN**: Create a process improvement plan.
- **DO**: Execute a process improvement plan.
- **CHECK**: Inspect feedback and adjust plan accordingly.
- **ACT**: Integrate a process improvement plan into the system.

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The 8 Wastes are eight types of process obstacles that get in the way of providing value to the customer.

- **Defects**: Efforts caused by rework, scrap, and incorrect information.
- **Overproduction**: Production that is more than needed or before it is needed.
- **Waiting**: Wasted time waiting for the next step in a process.
- **Non-Utilized Talent**: Underutilizing people's talents, skills, & knowledge.
- **Transportation**: Unnecessary movements of products & materials.
- **Inventory**: Excess products and materials not being processed.
- **Motion**: Unnecessary movements by people (e.g., walking).
- **Extra-Processing**: More work or higher quality than is required by the customer.
Pokayoke

Prevention → Detect In Process → Detection after Mistake

Eliminate at the source  Catch before problematic  Detect before next step
Case studies in-lab perspective

Annie Carter – Brooks Applied Labs
Case studies in-lab perspective

Jake Vanderboom – Pace Analytical Services, LLC