Welcome to A3 Thinking for Value Improvement

September 1, 2021
Value Improvement Embraces the Pillars of Lean: Respect for People & Continuous Improvement

Deliver Value

Respect for People

Continuous Improvement (Eliminate waste)

Leadership Support
Value Improvement Ideas will Reduce Non-Valued Added Work

- **Transportation**: Unnecessary movements of products & materials.
- **Inventory**: Excess products and materials not being processed.
- **Motion**: Unnecessary movements by people (e.g., walking).
- **Under-Utilization**: Underutilizing people’s talents, skills, & knowledge.
- **Waiting**: Wasted time waiting for the next step in a process.
- **Overprocessing**: More work or higher quality than required by the customer.
- **Overproduction**: Production that is more than needed or before it is needed.
- **Defects**: Efforts caused by rework, scrap, and incorrect information.
What is A3 Thinking?

- A3 = International paper size (11x17)
- A3 thinking = Structured problem solving, the scientific method
- Approach originated at Toyota in the 60s
- Prevents us from jumping to conclusions
- Enables root cause analysis and data-driven experimentation
- Supports PDCA model for continuous improvement
- Promotes a culture of continuous improvement

What’s important is not the format… it is the process and thinking behind it.
Why address this problem?

Data, charts to paint a picture of the current state

Succinct problem statement with data

What do you want to achieve?
Is it measurable?

A3 Template

1. Background: What problem are you talking about and why?

2. Current Conditions: Where do things stand now?

3. Target Conditions (goals): What specific outcome is desired?

4. Gap Analysis: Why does the problem exist?

5. Experiments: What countermeasures do you propose and why?

6. Action Plan: How will you implement?

7. Study, Reflect, Plan Next Steps: How will you ensure ongoing PDCA?
Understanding the Current Condition

What do you actually know?
→ How do you know it?

What do you need to know?
→ How can you learn it?
A problem well-stated is half-solved.”

“A problem thoroughly understood is always fairly simple. Found your opinions on facts, not prejudices. We know too many things that are not true.”

Charles F. Kettering (1876-1958)
American Inventor, Social Philosopher and Head of Research for GM
Problem Statements

**Good problem statements require data.** They should be specific as to what exactly is happening, where it is happening, over what time period it is happening, and what is the business result or impact of this problem.

*Answering these 4 questions will help you create a specific problem statement:*

<table>
<thead>
<tr>
<th>Question</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the specific problem?</td>
<td>30% of phone calls are not answered in the desired timeframe of 45 seconds</td>
</tr>
<tr>
<td>Where is it happening?</td>
<td>Z company call center in Chicago</td>
</tr>
<tr>
<td>When was the specific problem observed or measured?</td>
<td>January – March 2019</td>
</tr>
<tr>
<td>What is the result of this problem?</td>
<td>Customers are complaining of long waits to talk with staff</td>
</tr>
</tbody>
</table>

**Common initial problem statement:**
Lots of our customers are complaining that they wait too long on the phone.

**Well-defined problem statement:**
In the 1st quarter of 2019, 30% of the phone calls to Z's call center were not being answered within 45 seconds. This results in customer complaints and dissatisfaction.
Tips for writing a good problem statement:

**Do**

- Use a **full sentence**.
- **Quantify** the problem condition in terms of the business plan of the company and/or workplace (dollars, performance, safety, reliability, person-hours).
- State a specific **time period** during which the problem condition has occurred.
- Include a **benchmark** or other comparative value.
- Clearly answer the question: **Why is this a problem? What is the business impact?**

**Don’t**

- Express the problem as a failure to meet a target *(we missed our target of…)*
- State an opinion *(I think the problem is…)*
- Attempt to analyze the problem *(the problem is due to…)*
- Embed a solution *(we don’t have a system to…)*
Target Conditions move us towards a desired future state

We ask: Which problems need to be addressed to achieve the target condition? Which things will help most?
Gap and Root Cause Analysis

Fishbone

The top contributor from the fishbone moves to the 5 Whys

5 Whys

What is the problem?

Why?

Root Cause #1

Why?

Root Cause #2

Why?

Root Cause #3
# Brainstorm and Select Countermeasures

<table>
<thead>
<tr>
<th>Root Cause</th>
<th>Countermeasure</th>
<th>PICK</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Idea A</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Idea B</td>
<td>I</td>
</tr>
<tr>
<td>#2</td>
<td>Idea A</td>
<td>P</td>
</tr>
<tr>
<td></td>
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<td>I</td>
</tr>
<tr>
<td></td>
<td>Idea C</td>
<td>P</td>
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</table>

**Experiment with these two ideas**

**Always try ideas in the green quadrant first**

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**PICK CHART**

- **Possible**
  - Low impact, but easy to do. *Maybe*

- **Implement**
  - High impact and easy to do. *Yes!*

- **Challenge**
  - High impact, but hard to do. Create a plan for implementation. *Hold*

- **Kibosh/Kick-out**
  - Low impact and hard to do. *No!*
Use PDCA to Refine a Countermeasure

1. Brainstorm
2. Try something
3. Analyze data
4. Adjust
   - Try again

- Gather data
- Develop hypothesis
- Do an experiment
- Reflect on findings
1. Background: What problem are you talking about and why?

Why address this problem?

2. Current Conditions: Where do things stand now?

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Succinct problem statement with data

3. Target Conditions (Goals): What specific outcome is desired?

What do you want to achieve? Is it measurable?

4. Gap Analysis: Why does the problem exist?

5. 5 Whys:

Fishbone: The root cause of the problem

What
Why
Why
Why
Why

PDCA

6. Action Plan: How will you implement?

<table>
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<th>WHAT</th>
<th>WHO</th>
<th>BY WHEN</th>
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7. Study, Reflect, Plan Next Steps: How will you ensure ongoing PDCA?