Theme:

What are we trying to do?

Strategic Background

Why is this important?
*Why did you pick **this** problem?*

PLAN

Current Situation

What's happening now in terms of outcomes? Quantify

PLAN

Goal

What will success look like in same terms as above? Quantify. Benefits.

PLAN

Analysis

eg 5 Whys/Pareto

What's the real problem?

PLAN

Countermeasures

What will address the root causes & achieve the goals?

DO

Action Plan

How will the countermeasures be implemented?

#	Action	Owner	Due Date
1			
2			
3			
4			

DO

Confirmation

How will we know the countermeasures work?

STUDY

Standardise

How will we make the benefits widespread?

ADJUST

Everyday Lean

Method

- The A3 is the foundation of Lean Management and the keystone of improvement

- The A3 is completed by a team of 2:

    1. Owner

    2. Coach (may or may not be the Owner's manager)

- The Owner takes responsibility for addressing the problem through intense dialogue horizontally across the business with everyone who touches the troublesome process.

- The Coach takes responsibility for coaching the Owner through Socratic questioning, and ensuring the direction remains in line with strategic goals

- Complete one section at a time, not moving on to the next until the current one is in a good shape.

- Complete in pencil; be prepared to iterate many times on a section, both before moving on and from information revealed in a later section.

- Seek feedback from all affected by the problem and your countermeasures. Post the A3 in a public place – particularly if the problem is at the boundary between two parts of the organisation.

References & Further Reading

- http://www.lean.org/common/display/?JimsEmailId=86

- http://www.lean.org/common/display/?o=755

- Jamie Flinchbaugh: A3 Problem Solving
  https://leanpub.com/a3problemsolving

- Norman Bodek: The Idea Generator
  http://www.goodreads.com/book/show/5537665-the-idea-generator

- Masaaki Imai: Gemba Kaizen
  http://www.goodreads.com/book/show/3809497-gemba-kaizen

- Liker & Meier: The Toyota Way Fieldbook
  http://www.goodreads.com/book/show/232243.The_Toyota_Way_Fieldbook

- Jim Womack: Gemba Walks
  http://www.goodreads.com/book/show/10659351-gemba-walks

- Claudio Perrone
  A3 Thinker App http://a3thinker.com/app
  A3 Thinker's Action Deck http://a3thinker.com/deck

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Completion & Review Coaching Guide

Owner	Author leading the problem solving
Coach	Person guiding and assessing process
Date	Current version & date

Strategic Background — Plan

- Why is this important?
- Why should the reader care about this situation and be motivated to participate in improving?

Assessment Questions

1. Is there a clear theme for the problem report that reflects the contents?
2. Is the topic relevant to the organization's objectives
3. Is there any other reason for working on this topic (e.g., learning purposes)?

Current Situation — Plan

How do things work today?
- What is the problem?
- Baseline Metrics?

Assessment Questions

1. Is the current condition clear and logically depicted in a visual manner?
2. How could the current condition be made clearer for the audience?
3. Is the current condition depiction framing a problem or situation to be resolved?
4. What is the actual problem in the current condition?
5. Are the facts of the situation clear, or are there just observations and opinions?
6. Is the problem quantified in some manner or is it too qualitative?

Goal — Plan

- What outcomes are expected for what reasons?
- What changes in metrics can be plausibly expected?

Assessment Questions

1. Is there a clear goal or target?
2. Is it defined in the same terms as the Current Situation?
3. What, specifically, is to be accomplished?
4. What will improve, by how much, and when?

Analysis — Plan

- What is the root cause(s) of the problem?
- Use a simple problem analysis tool (e.g., 5 why's, fishbone diagram, cause/effect network) to show cause-and-effect relationships.

Assessment Questions

1. Is the analysis comprehensive at a broad level?
2. Is the analysis detailed enough and did it probe deeply enough on the right issues?
3. Is there evidence of proper five-whys thinking about the true cause?
4. Has cause and effect been demonstrated or linked in some manner?
5. Are all the relevant factors considered (human, machine, material, method, environment, measurement, and so on)?
6. Do all those who will need to collaborate in implementing the countermeasures agree on the cause/effect model reasoning?

Countermeasures — Do

- Proposed countermeasure(s) to address each candidate root cause.
  [This should be a series of quick experiments to validate causal model analysis.]
- Predicted results for each countermeasure.

Assessment Questions

1. Are there clear countermeasures steps identified?
2. Do the countermeasures link to the root cause of the problem?
3. Are the countermeasures focused on the right areas?
4. Will these action items prevent recurrence of the problem?

Action Plan — Do

- Proposed actions to implement the countermeasures

Assessment Questions

1. Who is responsible for doing what, by when
2. Is the implementation order clear and reasonable?

Confirmation — Study

- How will you measure the effectiveness of the countermeasures?
- If you are experimenting with a number of solutions, how will you iterate through solutions & compare them?

Assessment Questions

1. Does the check item align with the previous goal statement?
2. Has actual performance moved line with the goal statement?
3. If performance has not improved, then why? What was missed?

Standardise — Adjust

- How should the way we work or our standards be adjusted to reflect what we learned?
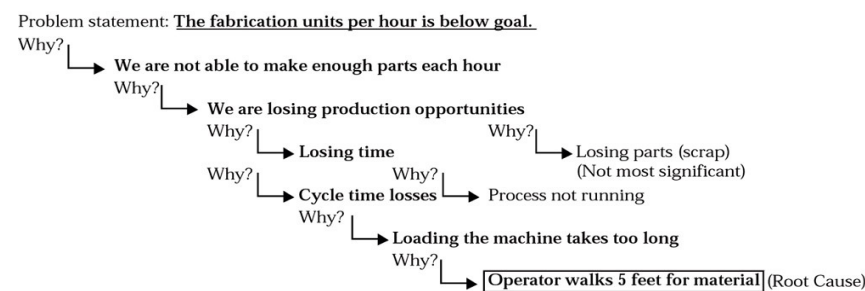- What do we need to learn next?

Assessment Questions

1. What is necessary to prevent recurrence of the problem?
2. What remains to be accomplished?
3. What other parts of the organisation need to be informed of this result?
4. How will this be standardised and communicated?

Presentation Hints & Tips

- Each proposal should take no longer than 4 minutes to explain - a couple of sentences of voiceover per section.
- As well as the assessment criteria listed on the template, be prepared above all to answer the challenge of "Why did you pick this problem?" Which means:
    - How did you determine that this problem deserves your time and attention?
    - Why did you choose this problem over the many other possible issues?
    - The object is for you to explain your reasoning so your coach can understand the situation, ensure that you've done adequate reflection, assure that you & the coach are in agreement and alignment on the issue — and so the coach can provide necessary support and guidelines for your process.
- Problems need to be analysed to identify root causes that can be addressed with countermeasures. It may be that there are several elements – you may need to iteratively attack each one to identify the most impactful.

LARGE PROBLEM
Many Possible Causes
Most Likely Causes
Point of Cause
Five-Why Process
Root Causes
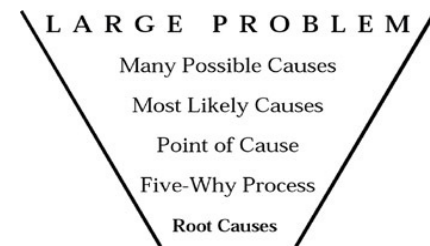
- A useful analysis technique is the 5 why analysis to produce a causal chain that can be read backwards, with the word 'therefore' between each step

Problem statement: The fabrication units per hour is below goal.
Why? We are not able to make enough parts each hour
Why? We are losing production opportunities
Why? Losing time Why? Losing parts (scrap) (Not most significant)
Why? Cycle time losses Process not running
Why? Loading the machine takes too long
Why? Operator walks 5 feet for material (Root Cause)

- Symptoms need to be **quantified** and justified. eg "Currently, this has been noticed that during the project delivery too much internal meetings is happened " What's the current average time per week? How has it changed over time? How do you know it's too much?
- All goals need to be **quantified** eg "Reduce the time spent on project level internal meetings" - from what to what?
- Keeping a log is part of analysis, not a countermeasure. What will the log allow you to do?
- 'Ongoing' is not a date usable in a plan.
- In the next text cells, what is the expected successful outcome (again, quantified & graphically communicated) of the proposed countermeasure?
- In the Standardise section, you must answer the question **How** will we standardise it? Don't fall into the trap of saying simply "we will standardise it" which just restates the same question.

- Some writing hints (borrowed from **Liker & Meier: The Toyota Way Fieldbook**)
    - Avoid excessive verbiage. A picture is worth a thousand words. Present data in a graphic form that is quickly and easily understood.
    - Use a consistent format for similar information. Pay particular attention to the scale on charts. Similar data compared with a different scale can be visually misleading and very confusing
    - Use line graphs in the problem description section (the first section) because they show the trend of the issue. Do not use Pareto graphs or pie charts. These are analysis tools, not problem description tools.
    - If you must use words, use bulleted statements rather than sentences, and keep it to three or four bullets per section to summarize the main points.
    - Make sure that any charts, graphs, or wording is sized so it is easily read.
    - When using a comparison tool such as a pie chart or Pareto chart, avoid comparing too many issues since this will make the data very small and difficult to read. Also, these are "separation tools" that allow the isolation of the "significant few from the trivial many." Anything past the top five is not one of the significant few and does not merit attention.
    - Avoid the use of coloured charts and graphs. When photocopied, the colour doesn't show, and if you use colour to identify elements, that clarity will be lost. This brings up a related point: Don't try to make a poor problem-solving activity look good by using fancy, colourful material. If your A3 is all fluff and no substance, it will be obvious. As Einstein said: "If you are out to describe the truth, leave elegance to the tailor."
    - While I'm on the subject of charts and graphs, I must mention the use of Microsoft Excel for charting purposes. It is a handy tool, but like any tool, it's only as good as the user. The main problem is that the default settings do not always provide the best result. Settings such as scale, markers, and lines are adjustable, and you must pay particular attention to font size and style. The size may automatically adjust and be out of balance with other similar charts. Make sure you change them for clarity and ease of understanding.
    - Use arrows to show the flow of information so the reader knows the relationship of each part of your story.
    - Avoid acronyms and technical terminology. Remember that your audience may include people who do not know the jargon.
    - Use your sense of visual balance. Make sure the story is carefully spaced and elements are aligned. It's distracting to view similar information, such as charts, in different sizes.

More info: **http://everydaylean.info/tag/A3**