

Study Guide: A3

A3 PROBLEM SOLVING

PROBLEM:	NAME:	DATE:
1. PROBLEM: WHAT HAPPENED?		3. CAUSE: WHY DID IT HAPPEN?
2. GOAL: WHAT SHOULD HAPPEN?		4. IMPROVE: HOW DO WE KEEP IT FROM HAPPENING?
		5. CHECK: HOW WILL WE KNOW IF IT WORKED?

This course provides a fundamental understanding of the A3 process and how to apply it in various settings.

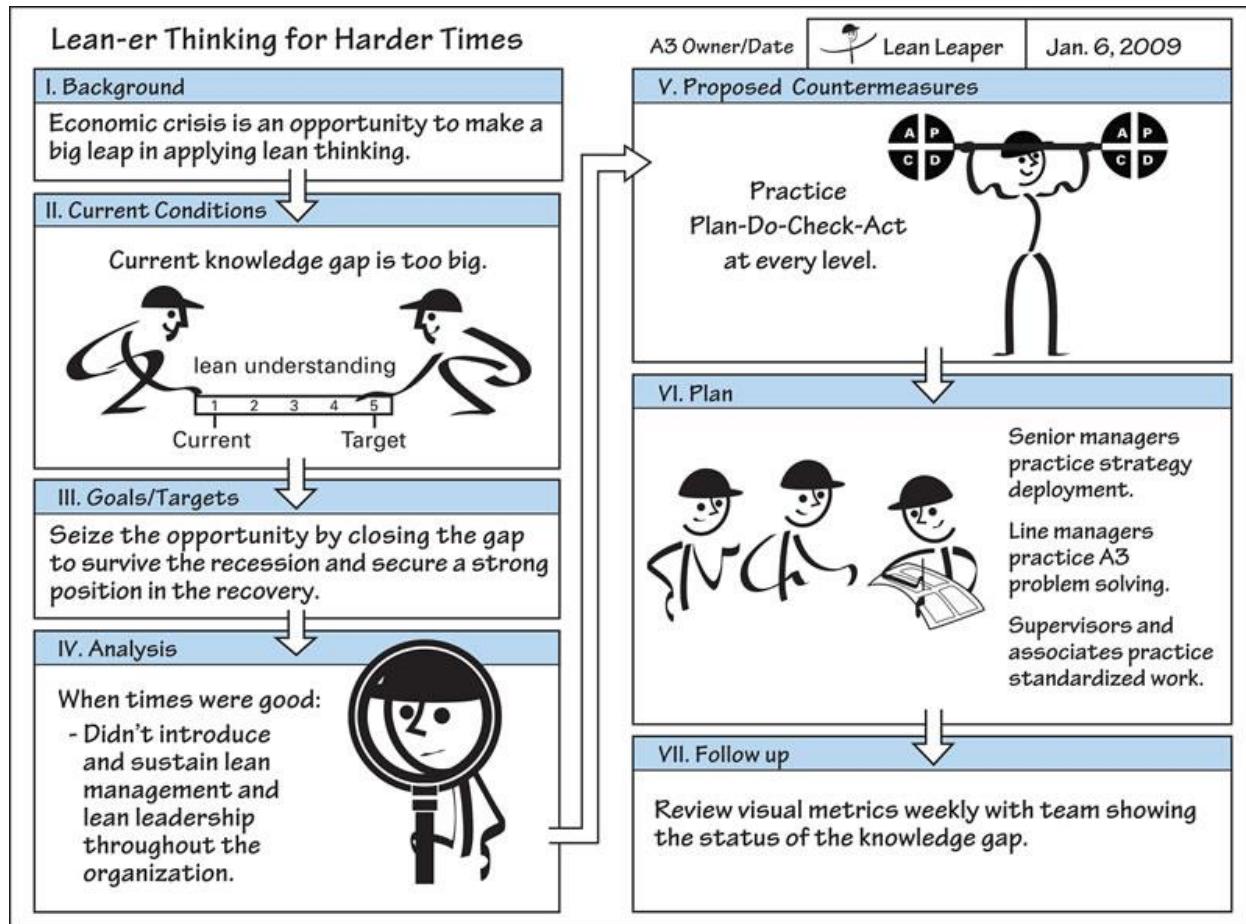
What is A3?

The A3 tool can be used to structure problem solving for Continuous Improvement

3 Common mistakes in problem-solving

1. Assuming you know what the problem is without seeing what is happening
2. Assuming you know how to fix a problem without finding out what is causing it
3. Assuming you know what is causing the problem without confirming it

A3 thinking helps us avoid these common mistakes and gives us a structure for solving problems in a way that creates sustainable and accurate outcomes



A3 helps to:

- Gain alignment and agreement
- Develop thinking problem-solvers along the way
- Tell the problem-solving story

A3 is a size of paper that measures 11" x 17". It was adopted at Toyota because it was the largest sheet of paper that could fit into a fax machine. It helps to tell the entire problem-solving story on a single sheet of paper.

A3 can be used in multiple environments to solve problems of varying complexity.

A3 Structure

There are many different forms for A3's but they all follow a similar structure. On the left side of the document, you'll find "How things currently are and how we'd like them to be." On the right side of the document, you'll find "How we will work together to get where we'd like to be."

Title
PPS A3 - What the Story Should Look Like

Step 1 | PROBLEM CLARIFICATION

1.0 Background
- Background information about the situation
- You and your responsibilities
- The scope of the subject/problem
Why am I tackling this problem and why is it important?
- Where does the Ideal Situation and Ultimate Goal come from?
- What is the impact to the business?

1.1 Gap Analysis - GAP is clearly visualised
Ultimate Goal (2027)
Ideal Situation (20...)
Current Situation (20...)
GAP!
Clearly state the GAP even if it is shown on the Graph - avoid any confusion!
Ultimate Goal: Where do you want to be in the future e.g. 2-4 yrs?
Where does this figure come from?
Ideal Situation: Where should you be?
Current Situation: Where are you now?
Problem Statement: How much is the GAP between the best and Current Situation, how much is this worth I.C. ...

Step 2 | CONTAINMENT

Containment Activity (SR, DR, etc.)
Visualise: Is the Containment working?
What actions have you taken (Action/Containment)?
What is the impact of Containment on the Gap?
When: When is the start date and timing?
Where: Where will the activity be done?
Who: Who will be involved (name, title)?
Why: What is the purpose of the activity?
How: How will it be done?
How much: What do you expect to achieve?
Show when Containment started

Step 3 | PROBLEM ANALYSIS & BREAKDOWN

Breakdown the Current Situation or Gap
Use Callouts to explain what you conclude from the data.
Next level of breakdown, keep going until you have broken the problem down.
Use data and facts to determine:
- What is the problem you are going to tackle?
- When is it happening?
- How is it happening?
- How much of the gap is it contributing to?
Breakdown key points:
- Pareto 80/20 rule
- Collect data if you don't have it
- Use the Problem Solving Tools to analyse the data
- State what the data is telling you!
- Summarise the Problem to Pursue

Point of Cause (POC) - Where is the Problem happening?
Process Steps
Point of Cause
Point of Cause key points:
- Walk back through the process steps
- Go and see for yourself
- Find where the problem happens
- Prove with data
Walk back through the process steps

Establish the Direct Causes - What switches the Problem ON and OFF?
Use a Fishbone Diagram to help structure Potential Causes.
Show the Data/Facts/Evidence to Prove the Direct Causes.
State how much of the Gap these Direct Causes represent.
Prove with Data the Direct Causes
- Prove with data the Direct Causes
- Light switch test! ON/OFF
- Prove with data or by experiment
- They are the first "Why" in Step 5
Summarise the Direct Cause(s)
- Direct Cause 1
- Direct Cause 2
How much of the Gap do they represent?

Step 4 | TARGET SETTING

SMART Target Statement
"By solving the Problem to Pursue by this Date, I will Close the Gap by this much!"
Short, simple statement
Visualise your Specific Target Contribution
Impact on the Gap
Still have this much Gap left
Target will close the Gap by this much
Always quantify the S, C & of the Target and potential risk action benefit if reality worst

Step 5 | ROOT CAUSE ANALYSIS

Problem to Pursue
Direct Cause(s)
Direct Cause 1
Direct Cause 2
Check
- No blame!
- You can influence it
- Will change the way we do things
- Will stop the Problem
- It is not re-training.
Root Causes

Step 6 | DEVELOP & PLAN COUNTERMEASURES

Direct Cause Countermeasures
Countermeasure Evaluation
Impact on the Gap
Date
Status
Responsible
Start
End
The "What"
The "When"
The "Where"
The "Who and How"

Step 7 | CHECK RESULTS

Result vs your Specific Target
Impact on the Gap
Did we meet the Target?
Can we remove Containment?
This much Gap is left
Result has closed the Gap by this much
Breakdown Summary
Date
Containment Status
Potential Results (Impact on the Gap)
Answer

Step 8 | STANDARDISE & SHARE

STANDARDISE
- What did you learn? What are the most significant?
- Document: Standardize Countermeasures, Management Review
- Update SW Work & Process documents, FMEA's, Control Plans etc.
- MUST be actioned (what, who, when, status)

SHARE
- How will you share the learning points?
- Can we apply the result anywhere else inside your area and outside
- To similar Products, Processes, Departments, Plants, Regions...
- How can we leverage the benefits?
- MUST be actioned (what, who, when, status)

The flow of the form is to start in the top left of the A3 and go down to the bottom, then continue to the top right of the form and proceed down to the bottom

There are several sections of the A3, which include the following:

1. **Project Title** - helps to summary what you are trying to improve
2. **Team** -
 - o **Sponsor:** Who is the supervisor supporting this project?
 - o **Leader(s):** Who is leading the project and team?
 - o **Other Team Members:** Who is involved in the A3 thinking process?
 - o **Last updated:** When the A3 was last updated
3. **Problem statement:** What problem are you trying to solve
 - o Tips
 - If you have "lack of", you're implying a solution

- Do not imply who is at fault
 - Make sure everyone on the team is in agreement with the problem statement
- 4. **Background:** How does this problem align with the vision of the organization? In what tangible ways is it important to the mission of the organization?
 - Tips:
 - Assess how the problem impacts the customer
 - Understand why we should care about this problem
 - Show how this project is aligned with organizational objectives
- 5. **Current State** - Identify where you are currently
 - Could include process map
 - Could include Run Chart to show current performance and goal
- 6. **Target State or SMART Goal**
 - Tip - SMART Goals should follow this criteria:
 - Specific
 - Measurable
 - Achievable
 - Relevant
 - Time-bound
- 7. **Analysis** - Understand Root Causes for the issues identified
 - Tools might include Fishbone or 5 Whys Analysis
- 8. **Key Drivers and Countermeasures**
 - Key Drivers - Items that must happen consistently to reach your goal
 - Countermeasures - Changes we are making to the process that will result in the Key Drivers
- 9. **Sustain plan** - Identify what structures will be in place to ensure that changes will sustain
 - Might include activity to sustain
 - Owner
 - Sustain method and frequency
 - Who owners will report status updates to



A3 Summary

A3 is a document that helps to visualize the thought process for solving problems



In summary:

1. The A3 is a consensus-building communications tool
 - Gains alignment and agreement
 - Develops thinking problem solvers
 - Tells the problem-solving story
2. Follow the flow of the A3, answer the questions, do the process in order
3. Every step is a conversation, not to be done alone
4. Visualize the thought process