
*Solving for
Opportunity: Using
Lean A3 Thinking*

May 10th

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Objectives

- Why A3 Thinking
 - Define the problem
 - Why data
 - How to conduct a root cause analysis
 - Review of the 5 Whys
 - Fish bone
 - Documenting tool
-

Why Promote A3 Thinking?

- A structured cycle of improvement
 - A framework for organizing thinking
 - For individuals and teams
 - Eliminates the waste of debating method
 - Makes problem solving visual
 - Tells a Story – like a story board for a film
-

Where do we apply A3 thinking

A3's work for all types of activities

- Strategic Planning
 - Problem Solving/Decision Making
 - Sharing ideas/Proposing Change
 - Value Stream Analysis
 - Rapid Improvement Events
 - A3 should become the default way of making improvement
-

First Step Define the Problem

- *What problem are we trying to solve? (not too big, something you have control over)*
 - How do you know it is a problem?: (Data)
 - What has been experienced by the team or member? (Data)
 - Where does the problem occur?
 - What data is available that highlights the problem?
 - Why is this project being done?
 - Why should anyone care or work on this project?
-



Break Out into teams for 10 minutes decide a problem and as group define the problem

Practice Time

Share & Debrief NOTE:
No Solutions Yet



Set Realistic/Smart Goals


- **SMART GOAL:** *What are we trying to achieve?*
 - Describe vision of improvement:
 - Set SMART improvement goals for current state measures: **S**pecific, **M**easurable, **A**chievable, **R**elevant, **T**imely (document in confirmed future state).
 - Establish a Threshold, Target and Stretch Measure and timeframe this project will take. Use this format to state your SMART goal:
 - **We will improve {something} from {baseline} to {target} by {date}.**
-

Effective problem and goal statements

***Do Not
Include.....***



*Cause and solutions come
AFTER defining problem and
goals*





**Breakout into
TEAMS and decide
your SMART GOAL
for the problem**

Practice Time

Share & Debrief NOTE:
No Solutions Yet



Collect Your Data

Family of Measures

- **Outcome measure:** The goal measure *Give me an example ? Often called LAG measure*
 - **Process measure:** How we get to the outcome often called LEAD measure what you influence what you measure real time. *Give me an example?*
 - **Balancing measure:** measure any unintended consequences of your improvement positive or negative *Give me an example?*
 - **Lag measures:** is what we see as the **outcome** after the fact can't act on it, done *Example?*
 - **Lead measure:** is the measure you act on to impact the Lag predictive *Give me an example ?*
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Root Cause Analysis : No Solutions Yet

6. PROBLEM / ROOT CAUSE ANALYSIS: *Why is there a problem? What is causing the problem?*

Analyze what is preventing moving to future state. Research the underlying conditions that generate problems/issues. Prioritize actions. Identify barriers and roadblocks.

5 Whys: Ask why problem occurs?

Why problem? → Answer 1.....

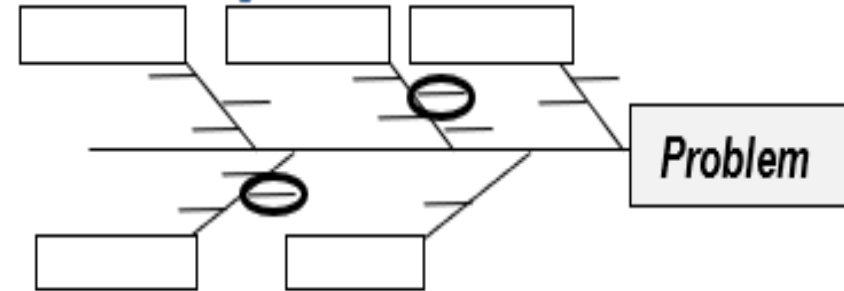
↳ Why Answer 1? → Answer 2....

↳ Why A2? → A3....

↳ Why A3? → A4....

↳ Why A4? → Root cause

Fishbone Diagram

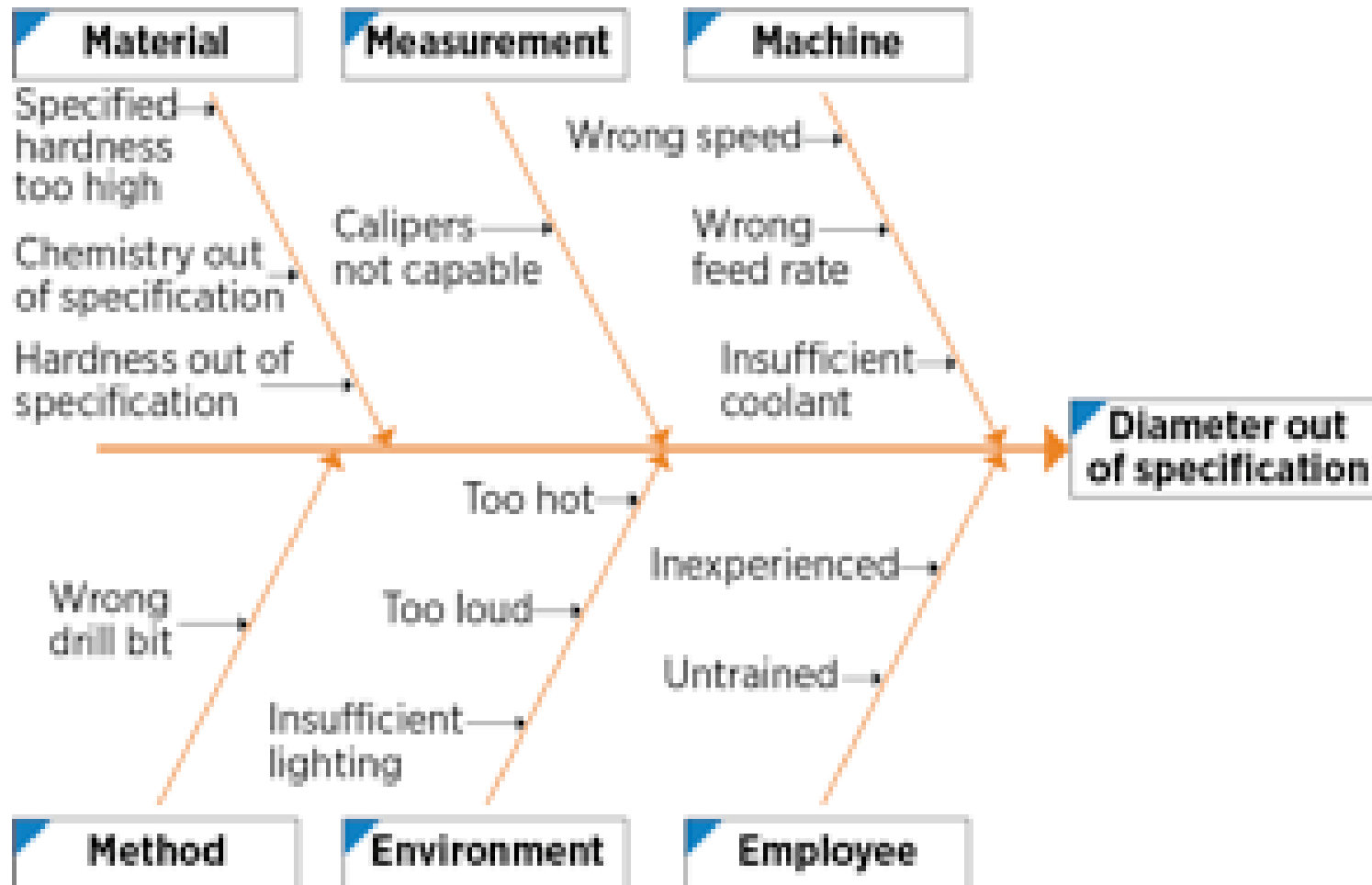


Fish Bone: No Solutions Yet

- Also called: cause-and-effect diagram, Ishikawa diagram
 - This cause analysis tool is considered one of the seven basic quality tools. The fishbone diagram identifies many possible causes for an effect or problem. It can be used to structure a brainstorming session. It immediately sorts ideas into useful categories.
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Fish bone

- 1. Agree on a problem statement (effect).** Write it at the center right of the flipchart or whiteboard. Draw a box around it and draw a horizontal arrow running to it.
 - 2. Brainstorm the major categories of causes of the problem.** If this is difficult use generic headings:
 - 1. Process**
 - Machines (equipment)
 - 3. People (manpower)**
 - Materials
 - Measurement
 - Environment
 - Technology
 - 3. Write the categories of causes as branches from the main arrow.**
 - 4. Brainstorm all the possible causes of the problem.** Ask "Why does this happen?" As each idea is given, the facilitator writes it as a branch from the appropriate category. Causes can be written in several places if they relate to several categories.
-



People
Process
Technology
Regulations

Five Why's Video

- <https://www.youtube.com/watch?v=BEQvq99PZwo>

Five Whys

- Debrief
- What were the steps in 5 whys?
- Problem
 - Why #1
 - Why#2
 - Why#3 etc.
- What happens if we stop too soon?
- When do we know to stop?

It's important to note that the purpose of the 5 whys isn't to place blame, but rather to uncover the root cause of why something unexpected occurred. Additionally, it helps a team create small, incremental steps so that the same issue doesn't happen again (to anyone).

Select the root cause or several from Fish Bone and then begin your plan to correct

PDSA cycles

A3 story boards for your problem solving

Theme: _____ Owner: _____

Date: _____ Version: _____


A3 Thinking

Plan


 Problem Background Context

 Current 'as-is' State

 Target 'to-be' State

 Problem Root Cause Analysis

Do

 Countermeasures - *Corrective Actions*

Check

 Implementation Plan - *Confirmation*

Act

 Follow-up Actions

 Iterate

Background

Tardiness has become a problem, jeopardizing job

- Last year, attendance was good—4 tardies all year
- This year, starting in March, averaging one per week
- I want to minimize the time spent preparing and driving
- Tardy defined as not being ready to work at 8:00

Quarter	Tardies
Q1-09	1
Q2-09	2
Q3-09	1
Q4-09	4
Q1-10	12

Current Condition

```

    graph TD
        PrepAM[Prep for Work (AM)] --> TimeToEat{Time to eat?}
        PrepPM[Prep for Work (PM)] --> TimeToEat
        TimeToEat -- NO (48%) --> StopCoffee[Stop for donuts & coffee]
        TimeToEat -- YES --> BridgeOpen{Bridge Open?}
        StopCoffee --> BridgeOpen
        BridgeOpen -- NO --> Organize[Organize for work]
        BridgeOpen -- YES (54%) --> WaitBridge[Wait for bridge]
        Organize --> ReadyToWork([Ready to work])
        WaitBridge --> Organize
    
```

- Planned departure time 7:15 for 8:00 start
- Average of 37 minutes from door to 'ready to work'
- Average 22 minutes of evening prep work
- Average 26 minutes of AM prep work
- Average 6 minutes to get settled at desk

Stop for donuts & coffee

- Average stop 6 minutes
- Short: 3 minutes
- Long: 10 minutes

Wait for bridge

- Avg delay 4 min
- Short: 37 sec
- Long: 6 min

Goal

- Reduce tardiness from 12/qtr to 1/qtr
 - 91.6% reduction
- Minimize time spent preparing for / travelling to work

Rate	Value
Old rate	1
Current rate	12
Target rate	1

Root Cause Analysis

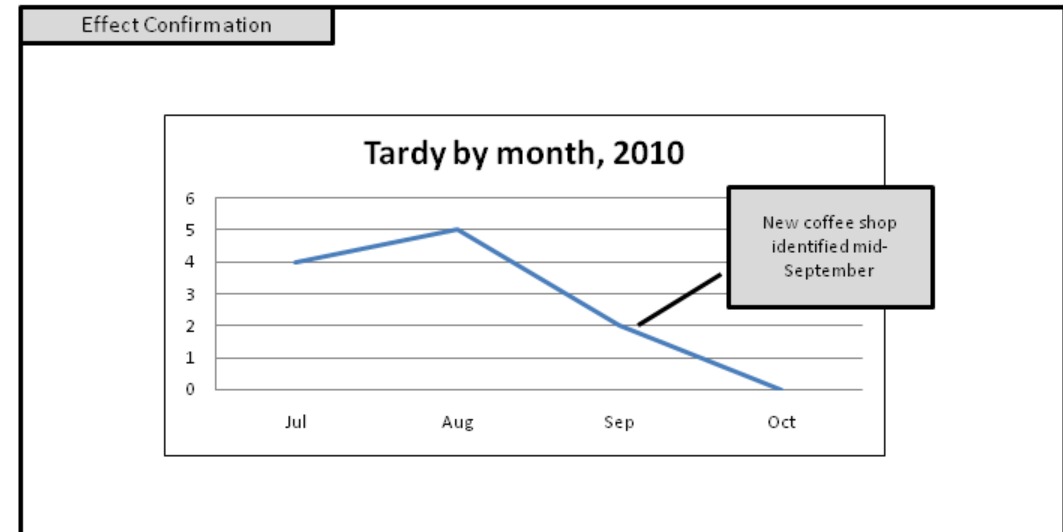
Factor	Tardies
Coffee	12
Bridge	7
Traffic	4
Lost item	1

Month	Tardies
Oct	1
Nov	2
Dec	1
Jan	1
Feb	1
Mar	4
Apr	3
May	5
Jun	4

- Old coffee shop closed in March
- New shop closer to home (higher variation, less information)

Countermeasures

Suspected Cause	Action Item	Responsible	Due	Finding
Stopping early for coffee eliminates option to skip.	Find new coffee shop closer to work.	Jeff H.	9/14/10	ID'ed and tested new shop. Decent brew, good donuts.



Follow-Up Actions

Action Item	Responsible	Due	Status
1. Open donut shop on-site at office	John Doe	3/1/11	Scheduled start 12/1/10
2. Improve AM process to prevent skipping breakfast	Jeff H	1/31/11	Data collection in process

GAP analysis helps in identifying key areas of improvement from current state to future state.

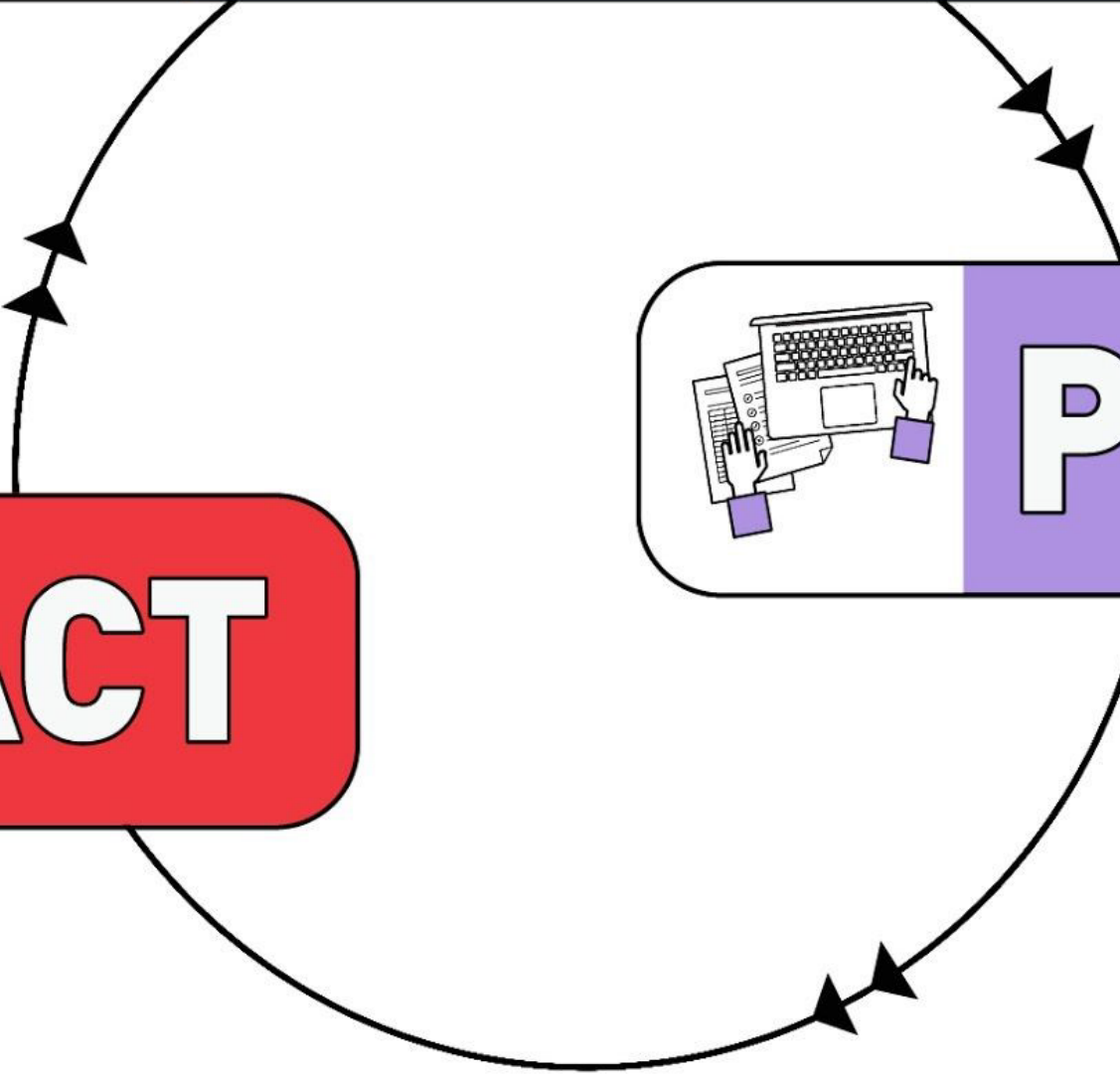
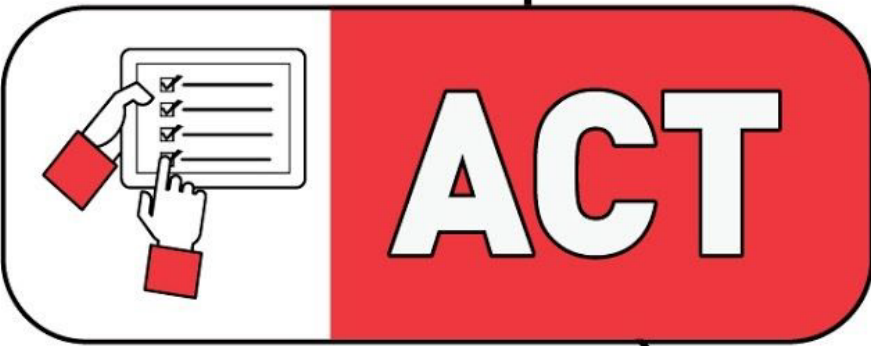
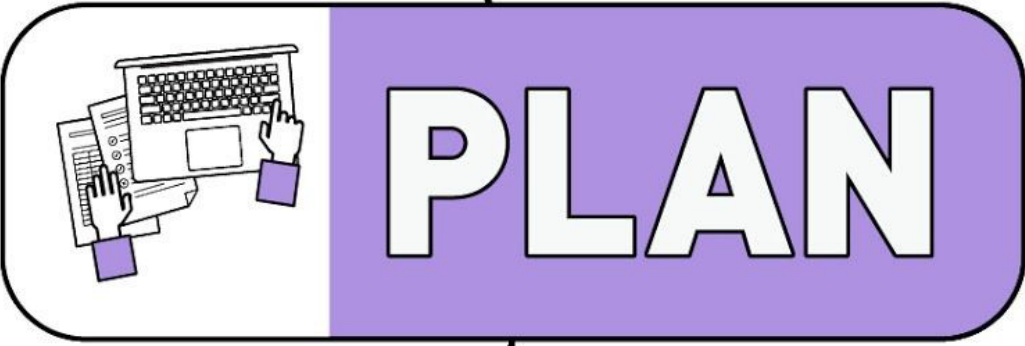
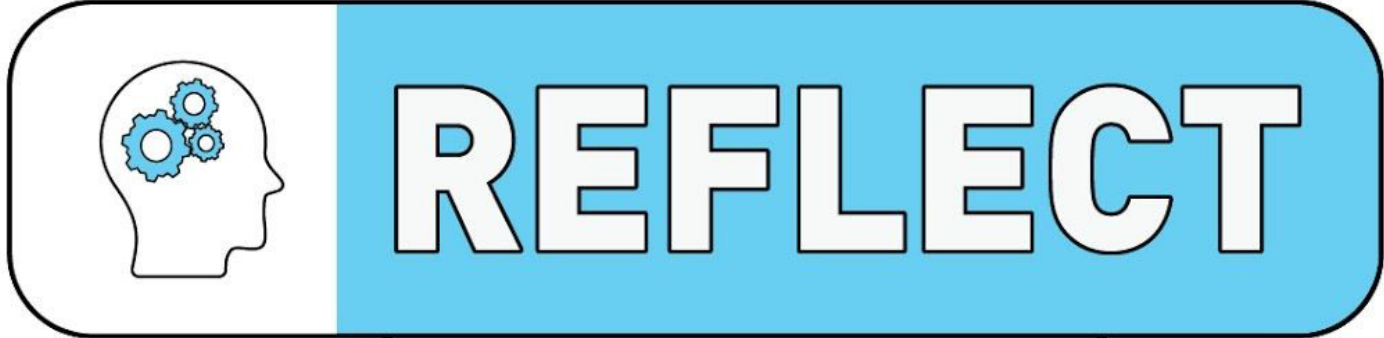
Using this tool, you can make important decisions about the future and how the business needs to be changed.

	Current State	Data	Future State	Gap	Root Cause	Action to Close Gap/PDSA
What	What happened?	Lead, Leg and balancing measures Moving into value based payment - data is critical	What should it look like?	What is different?	Fishbone, 5 Whys and/or brainstorming	What will be done to address the gap?
Where	When is the confusion?		Where will it change?	Where will it be different?		Where will it be addressed?
When	When is it done?		When will in change?	When are the differences needed?		When will the difference be addressed?
Who	Who does the work?		Who will do this?	Who will identify & validate the gap?		Who will address the difference?
How	How is it sequenced?		How will it be timed?	How will the gap be improved?		How will it be rolled out?

	Current State	Data	Future State	Gap	Root Cause	Action to Close Gap/PDSA
What						
Where						
When						
Who						
How						

Daily Times

WHAT ARE THE
**TAKE-
AWAYS?**



GAP analysis helps in identifying key areas of improvement from current state to future state.

Using this tool, you can make important decisions about the future and how the business needs to be changed.

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