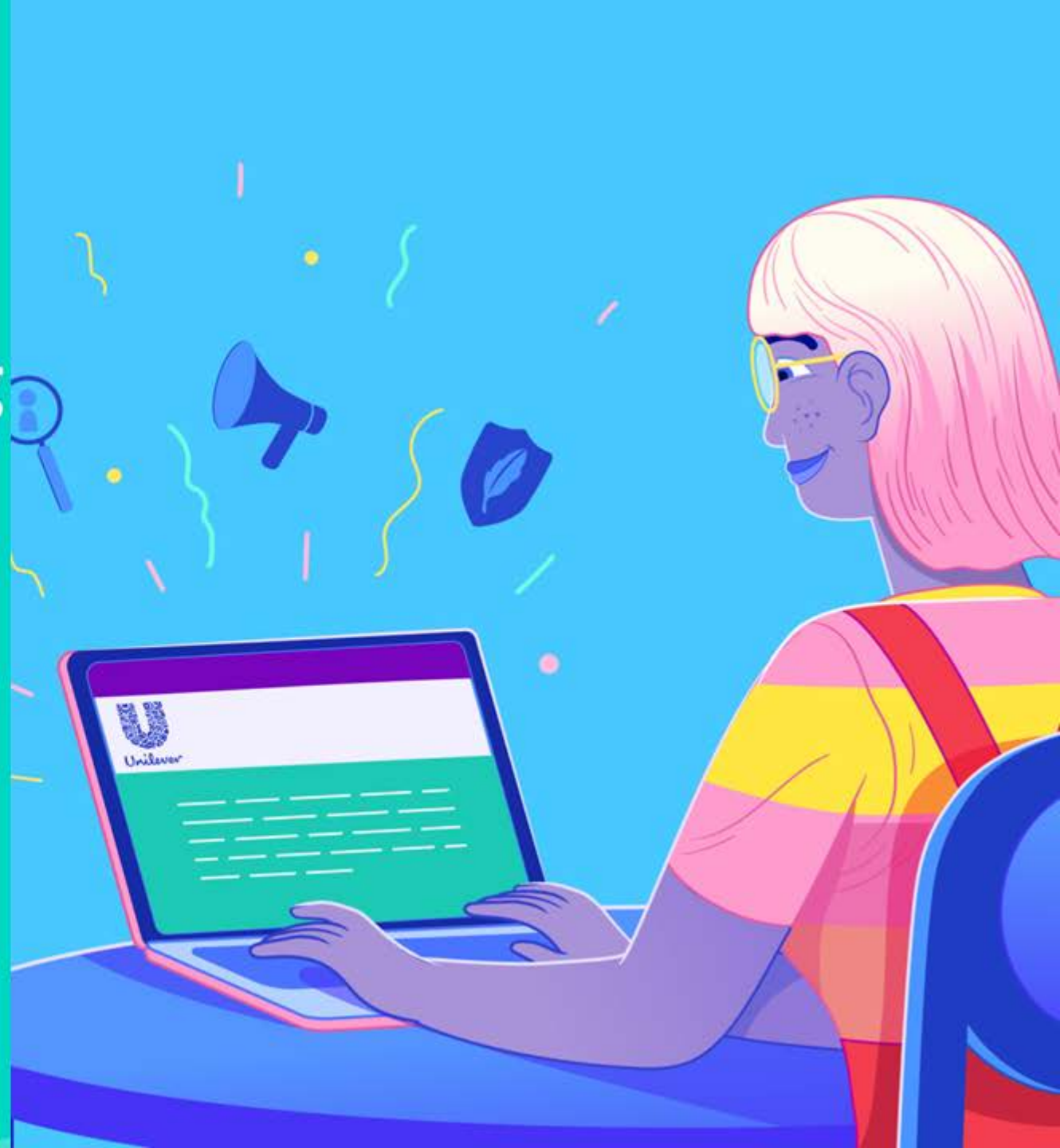


Leadership For Future Manufacturing

Leading Productivity -
Problem Solving
and Improvement



12/08/2026



Problem Solving and Improvement - Introduction

Running away from any problem only increases the distance from the solution.

- Anonymous



Introduction to Improvement Practices



Voice of the Customer



Root Cause Tools



Leading Improvement



OUR 4 BEHAVIOURS THAT HELPS US LEAD PROBLEM SOLVING & IMPROVEMENT

CARE 
DEEPLY 

F  **OCUS ON**
WHAT COUNTS

STAY THREE 
STEPS AHEAD

DELIVER WITH 
EXCELLENCE 

Problem Solving & Improvement

– Agenda

- Introduction
- Introduction to improvement principles
- Voice of the Customer
- Root Cause Analysis Techniques
- Leading improvement in daily routine
- Commitment to Action

OUR 4 BEHAVIOURS THAT GIVE
US OUR WINNING CULTURE



CARE 
DEEPLY 

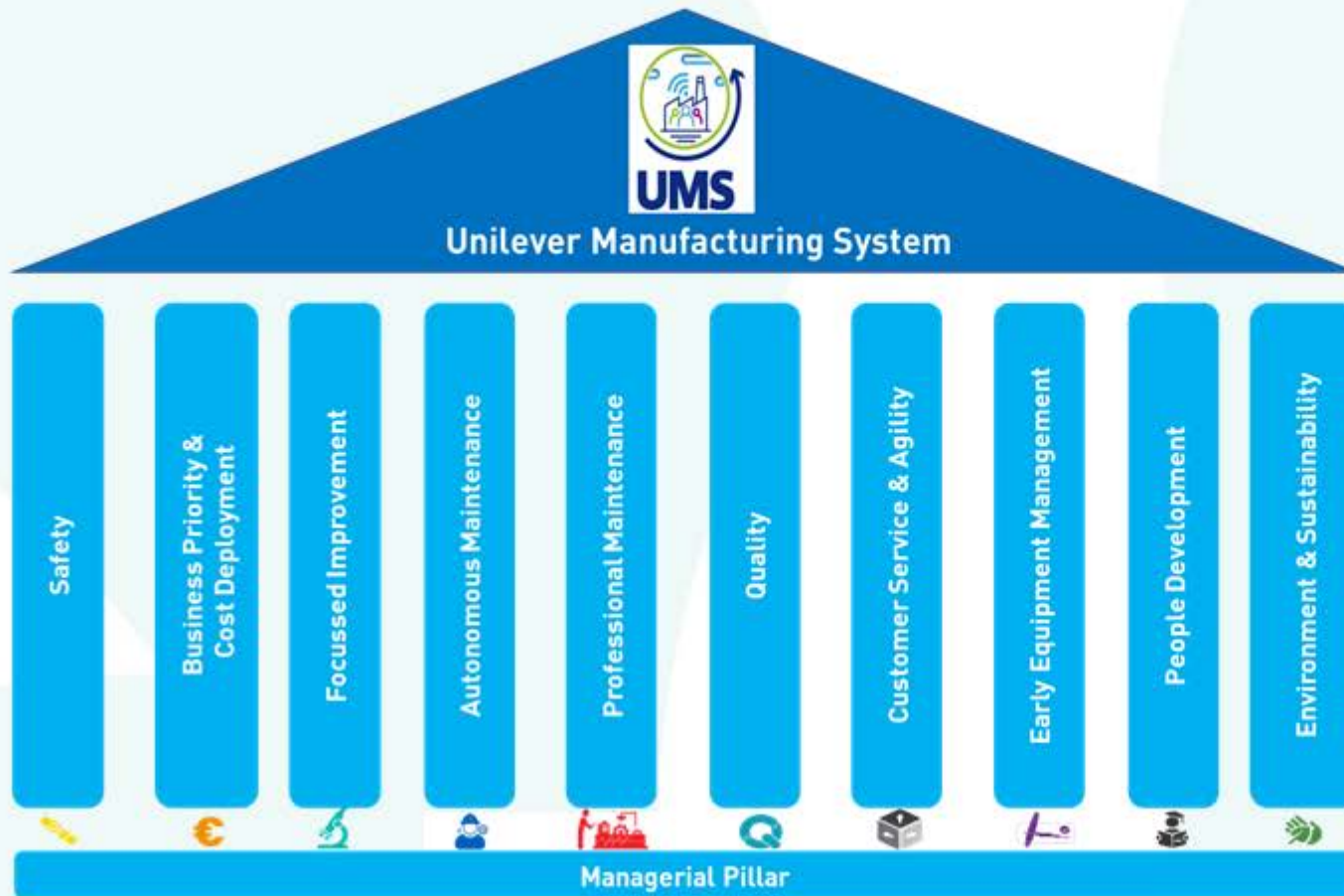
FOCUS ON
WHAT COUNTS

STAY THREE 
STEPS AHEAD

DELIVER WITH 
EXCELLENCE 

UMS pillar structure

Pillars agenda is owned by Global ManEx in collaboration with **capability teams** to ensure logic alignment with current business needs, priorities and programs



Key elements of the managerial pillar

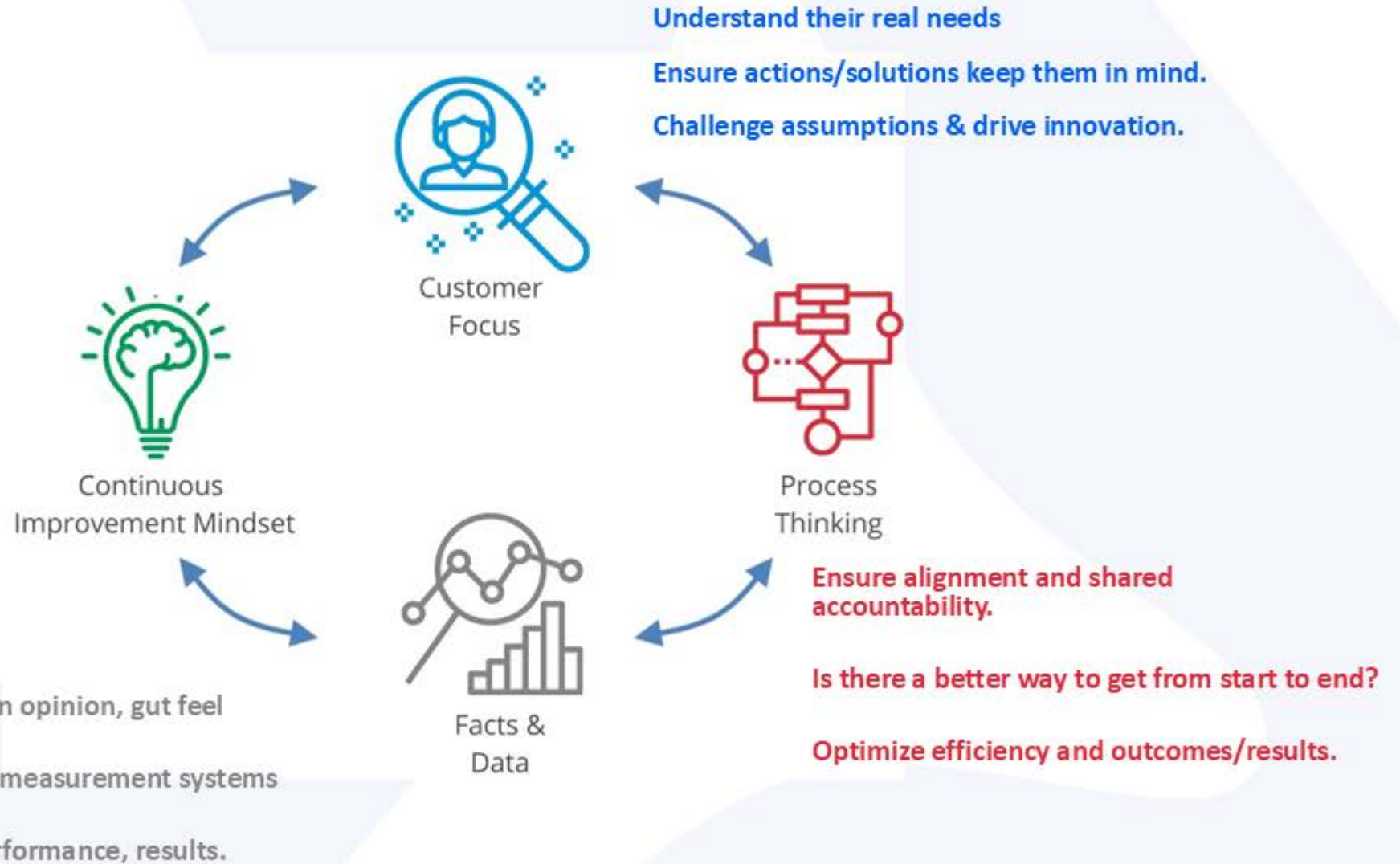
- (1) Factory Master plan
- (2) Organization
- (3) Culture
- (4) Digital
- (5) Best practices creation & replication

Unifying Principles of Improvement

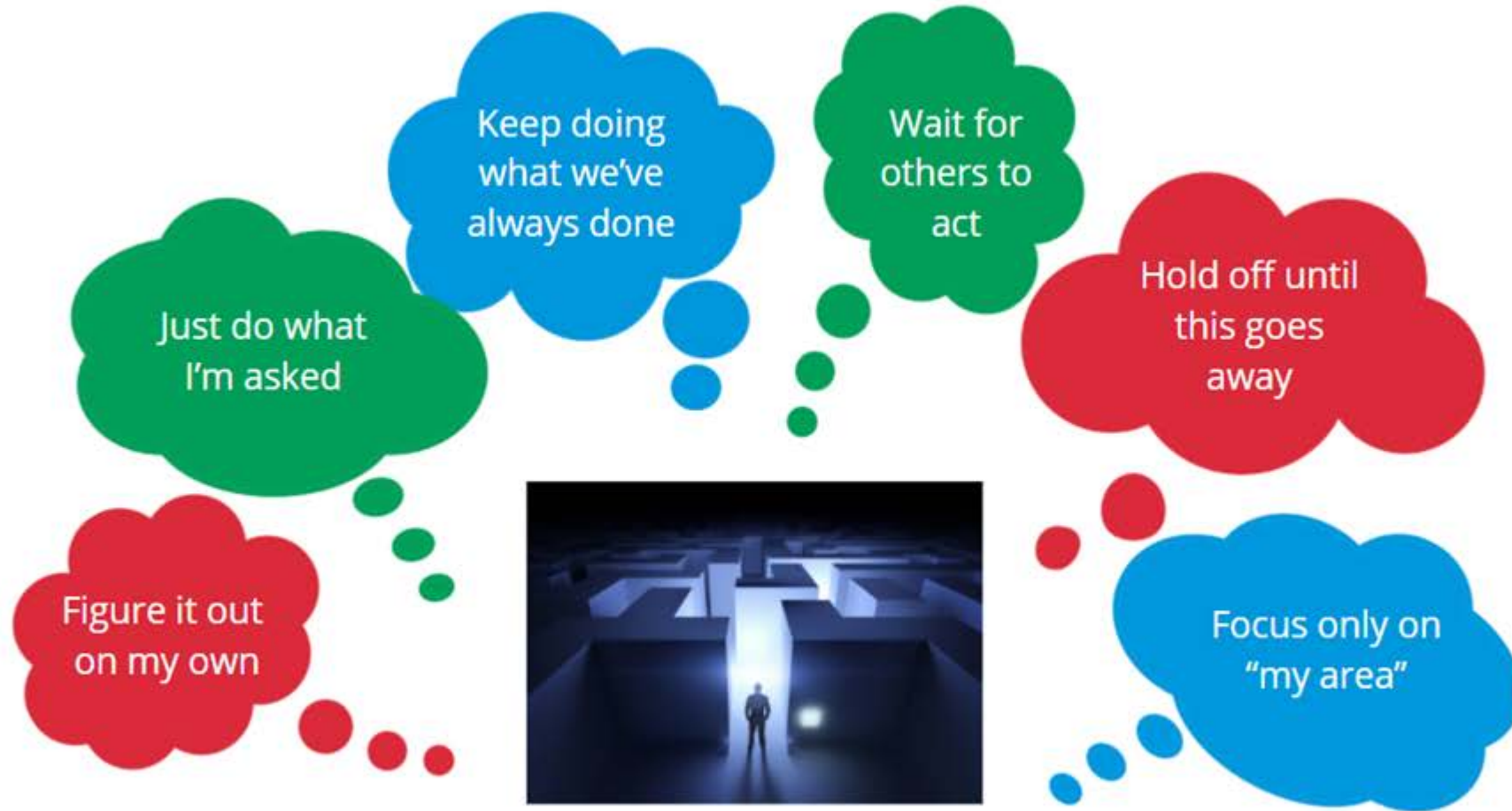
Continually Seek Perfection

Resilience

Curiosity



Common Response to Business Challenges



Introduction Activity

What is the role of a leader in improvement?

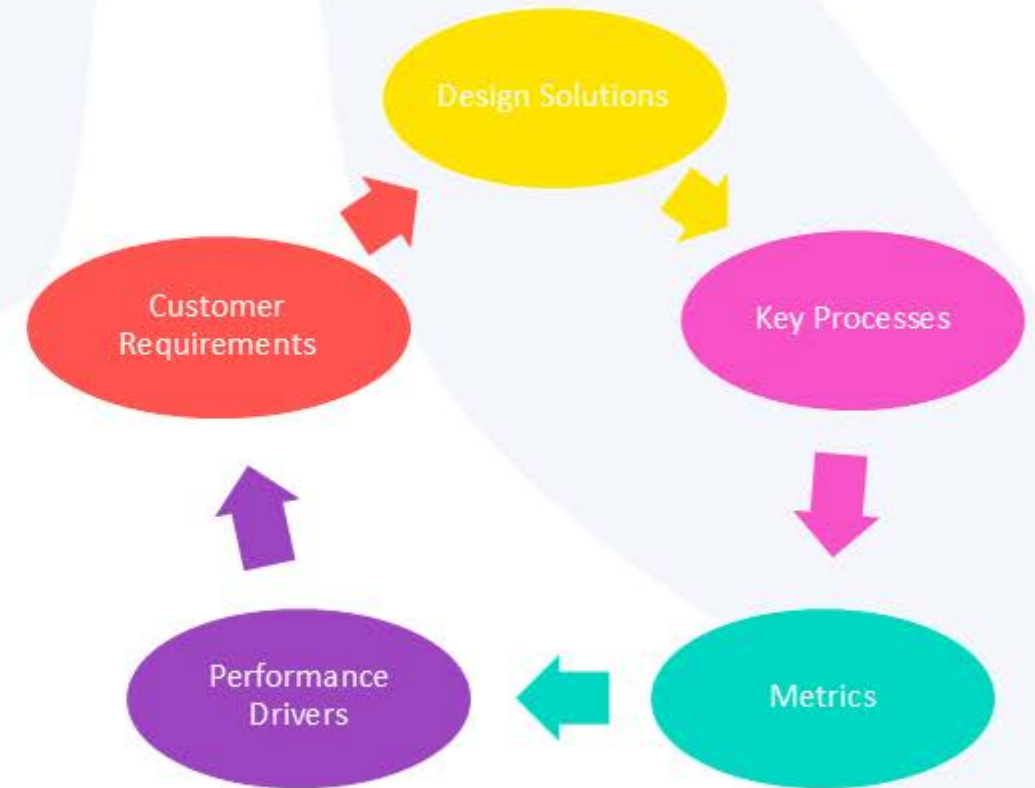
Workbook Page 2



Key Leadership Responsibilities

– Debrief

- Build a motivated and engaged team
- Use the organizational goals as a framework, create relevant, “Line of Sight” improvement targets, stretch goals, and appropriate measures.
- Prioritize well – we cannot do everything at once – what will make a difference to our customers and our performance?
- Manage scope... biggest factor leaders need to keep an eye on!
- Encourage creative solutions that really address the issue (eliminate root cause)



Improvement Tug-of-War and developing an improvement culture

Good Habits

- Make decisions on facts
- Pay close attention to customers
- Take the time to do it right
- Collaborate, coordinate, communicate
- Avoid complacency

Bad Habits

- I know what I need to know
- Customer? That's my boss!
- Get it done fast & we'll clean up later
- I got my act together, why don't the other guys?!
- This system has always got the job done!!

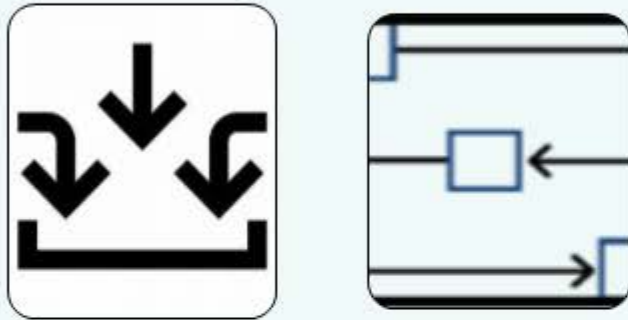


Voice of the Customer

What are their needs?

Output and Service Levels

Input & Process



What Service Levels



Output and Outcomes



Are driving the results and customer satisfaction here.....

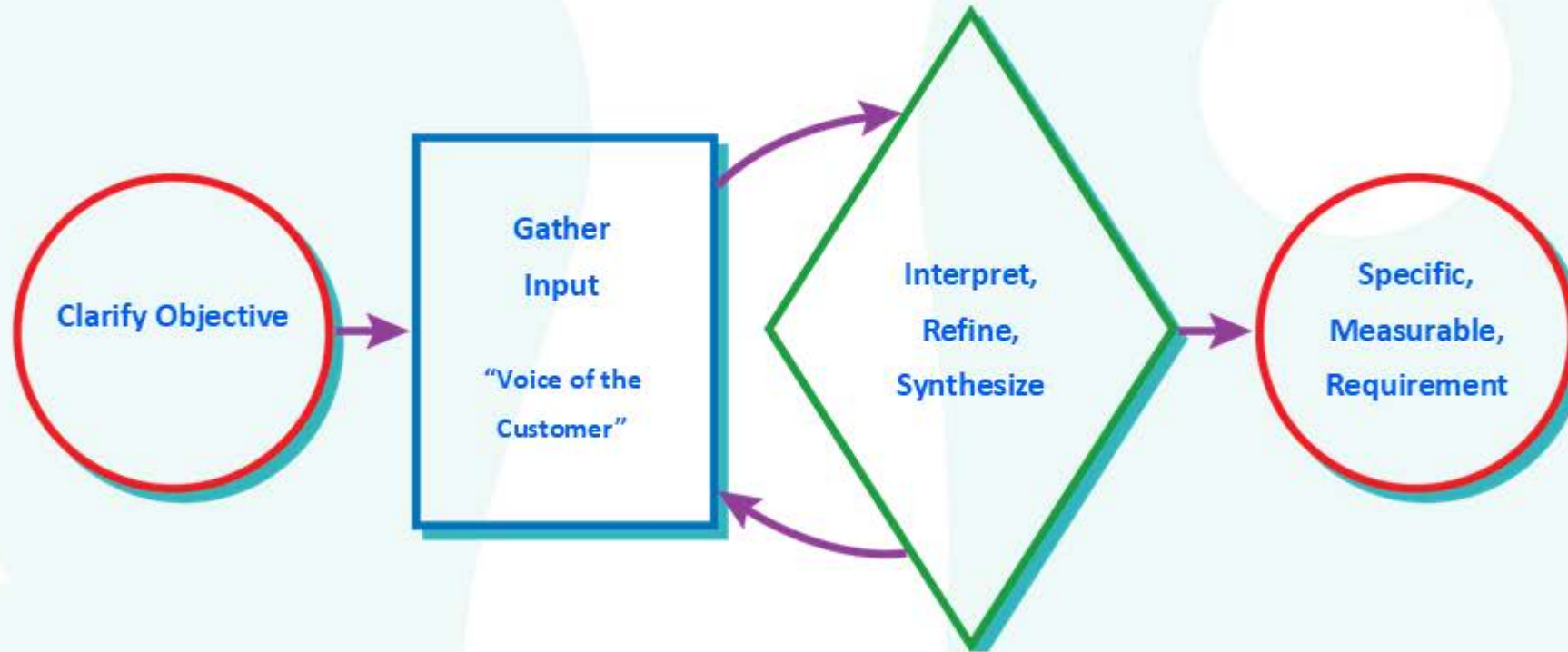
Requirements Challenges

Things to remember ...

- Customers tend to be unsure/vague
- Your own assumptions may get in the way
- Testing, probing & looking “downstream” to Outcomes are key
- Service requirements may be important too
- Most effective processes can flex to varying requirements
- Not all requirements are created equal



Clarifying Requirements



Voice of the Customer

– Activity

In pairs

- Who are your customers – remember both internal and external – find one of your internal customers in the group
- Have a conversation with them...
- What are their needs from you?
- What outputs / performance and service do they require?
- Where are the gaps today?



Root Cause Analysis Improvement tools & techniques

Where do problems come from?

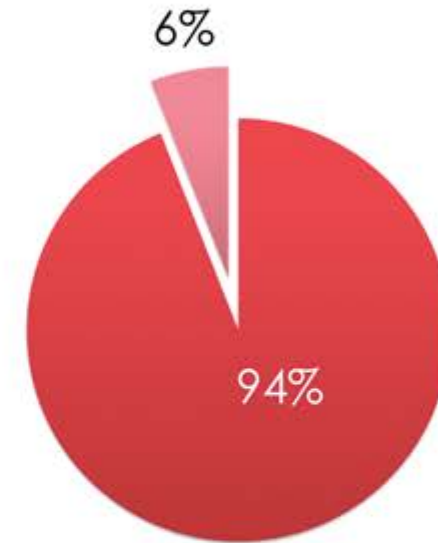
PEOPLE
PROCESS
MATERIALS
SYSTEMS
PROCEDURES



Deming's Rule

The true reasons things go wrong in business, is the underlying processes and systems

It is the responsibility of management to provide those process and systems to allow people to do great work.



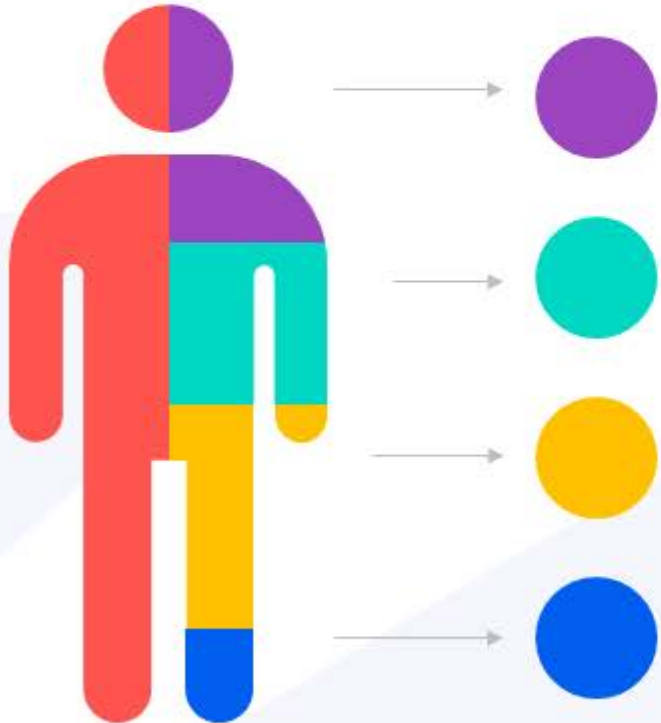
"94% of the problem are caused by the system and 6% by the individual"

Demings 94/6 rule

Understand the Process

Be hard on the process, not the people

*True or False –
Every process is
perfectly designed to
achieve exactly the
results it gets....?*



Encourage awareness of problems and opportunities

Errors and Problems are clues and opportunities to improve

Constant pressure to improve without a method is demoralizing

Processes often cannot handle all the different scenarios that exist

Improvement Methods

Good improvement processes have a common series of stages:

- Define the problem/issue to be improved
- Gather data/evidence
- Identify things that contributed to the problem issue
- Find the root causes
- Develop solution recommendations
- Implement the recommendations
- Observe the outcome to ensure effectiveness



Root Cause Analysis Reflection and Discussion

In Small Groups:

- What are we doing well just now with our approach to PDCA and 5W+1H?
- What areas do we need to focus on for improving?

Workbook Page 4



What is PDCA & its Purpose

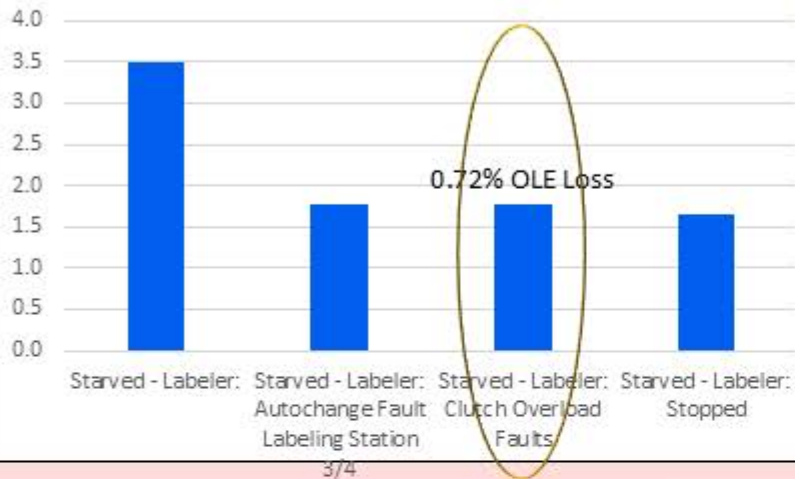
- PDCA is a project management tool for continuous improvement activities aimed at Improving Processes & Resolving Problems
- Effective tool for applying the basics of the Scientific Method
- PDCA contains "4" basic components:
 - PLAN
 - DO
 - CHECK
 - ACT



Example - Labeler Clutch Faults

PLAN – Labeler Clutch Faults causing 0.7% OLE Loss to the line for 12 Oz bottles

Labeler Loss Opportunities

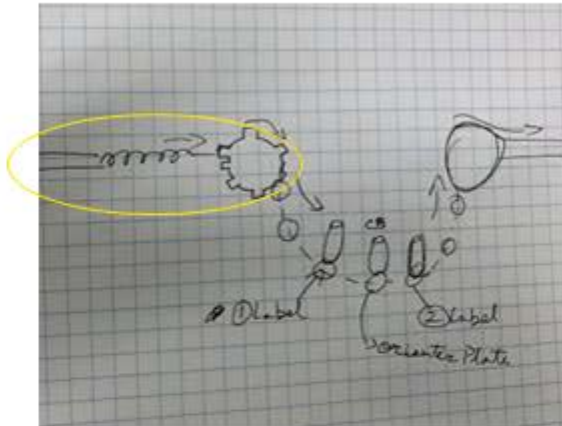


3G

Line 34 Labeler Infeed Jam is observed. 1.8-hour loss at infeed star wheel and infeed helix for 12 Oz bottles.

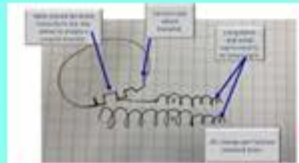
5G

- The bottles are not entering the star wheel right.
- Space between both the infeed helix not as per standard
- No current standard for infeed helix installation.
- Long worm and small worm not timed right.



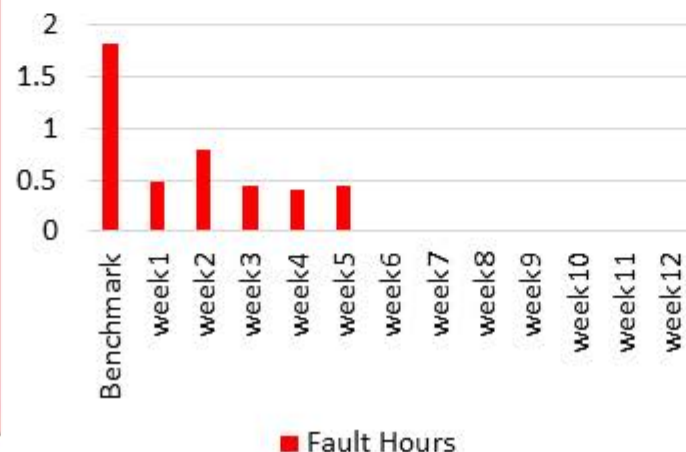
ACT - What's Next?

Replicate the standards and update changeover checklist and change over procedure for other lines after finalizing the results and findings.



CHECK – Status?

Fault Hours



DO - What Did We Do?

Who	What	When	Complete?
Rachit	Stratification of the Loss		Completed
Rachit	Observe phenomena(3G/5G)		Completed
Rachit	Observe the changeover procedure and go over the theory of operations		Completed
Rachit	Create standards		Completed

The 4 PDCA Stages

PLAN is a basic 3-Step Process:

1. Identifying the Problem

Collecting/Stratifying Loss Data

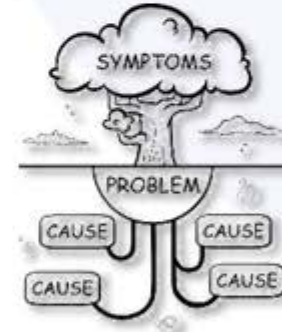
Possible Tools → 5G and 5W1H



2. Analyzing the Problem

Perform Root Cause Analysis

Possible Tools → WHYWHY or advanced CI tools



3. Solution Development

Trialing & Experimentation of solution options

Cost evaluation for solutions

Evaluation for final solution to be implemented



The 4 PDCA Stages

DO focuses on application and execution of countermeasures for the Root Cause identified in the previous stage.

Critical steps include:

Action plan inclusive of the “**3Ws**”:

“**What**” is to be done

“**Who**” is to complete

“**When**” is to be completed

Aligned measure for result effectiveness of solution

Testing the possible solutions for effectiveness



PLAN

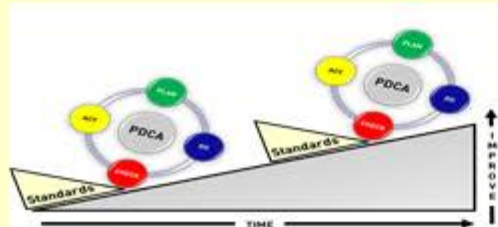
Lowest loss level possible



Option B

Option C

- **Standard development**
 - AM, SMP, SOP, Work Instruction
- **Training**
 - Role specific or others
- **Replication of solution**
 - To like processes/equipment
- **Maintenance Prevention (MP)**
 - Feedback to Engineering to future design



Check - Loss Trend

Category	Value
Benchmark	20
Action 1	16
Action 2	24
Results Week 1	2
Results Week 2	1
Results Week 3	2

Target: 5

RATIO = 5:1

WHO
WHAT
WHEN

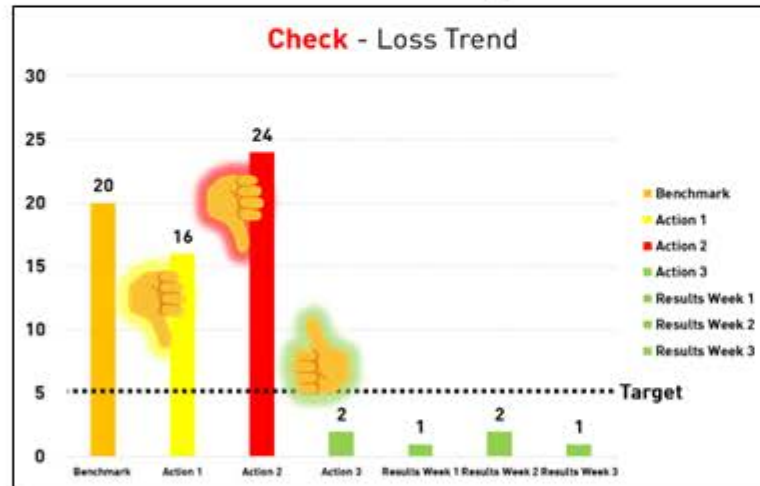
[illegible]

The 4 PDCA Stages

CHECK main goal to verify results from solutions.

Critical steps include:

- Confirm improvement based on Before/After data



- Example shows **Benchmark** data and Target for solution measurement
- Actions 1 & 2 were not successful
- **Action 3** was successful and was maintained for weeks following that completion

- Measure Benefit-to-Cost ratio (B:C) (when appropriate)

- Calculation requires basic cost data
- **Benefit** (\$) input comes from the total opportunity savings opportunity from the benchmark loss
- **Cost** inputs come from money spent for solutions and can include:
 - Labor (\$)
 - Parts (Stock / Fabrication) (\$)
 - Line Time (\$)

- Calculation example for B:C:

Benefit = \$25,000
annually
Cost = \$5,000

- Labor = \$1,200
- Parts = \$1,800
- Line Time = \$2,000

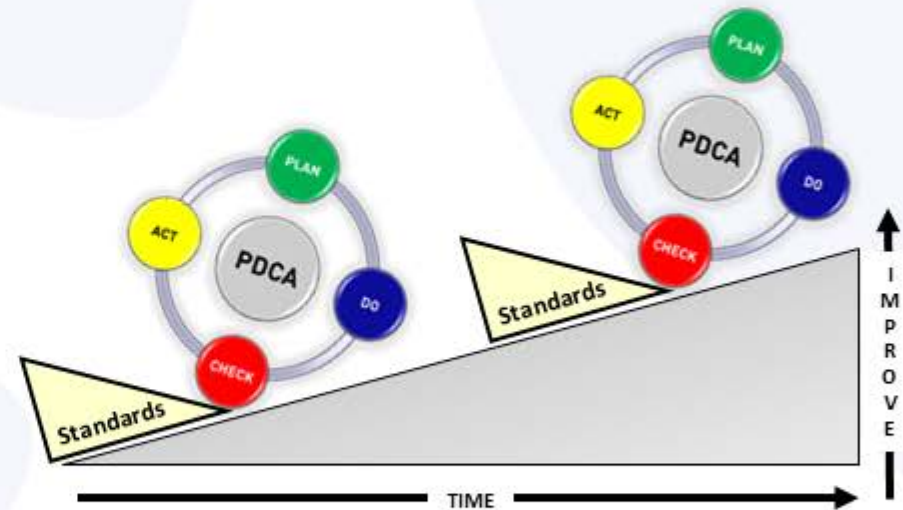
Benefit :
Cost = Ratio
\$25,000 / \$5,000 = 5
RATIO = 5:1

The 4 PDCA Stages

ACT stage main purpose is to take further action based on what we have learned and to create standards to prevent the reoccurrence of the problem.

Considerations:

- **Standard development**
 - AM, SMP, SOP, Work Instruction
- **Training**
 - Role specific or others
- **Replication of solution**
 - To like processes/equipment
- **Maintenance Prevention (MP)**
 - Feedback to Engineering to future design



Root cause Analysis – 5W + 1H



“5W1H” is a problem solving tool to properly describe a problem, by asking the following questions

What?

When?

Where?

Who?

Which?

How?

It is used to guarantee that a problem is analysed taking a complete view of all its essential aspects.

The technique of “5W+1H” helps to understand the details of what happened, in other words, it helps to understand specific circumstances, each time a deeper comprehension is needed.

The questions guide the analysis in order not to miss any aspect of the phenomena description

The secret to do a good description is to think how a journalist may describe a car accident. You are the journalist. The problem is the car accident. Describe the way the accident occurred not giving the responsibility to something or somebody but trying to describe the situation in an objective way.

The Value of 5W + 1H

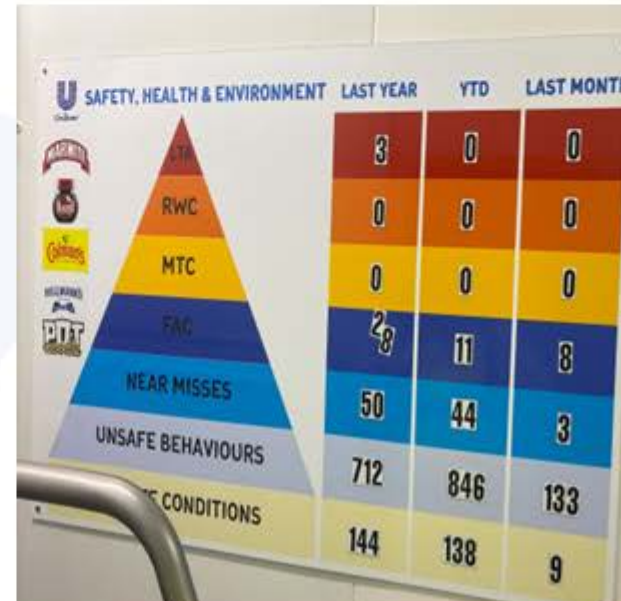
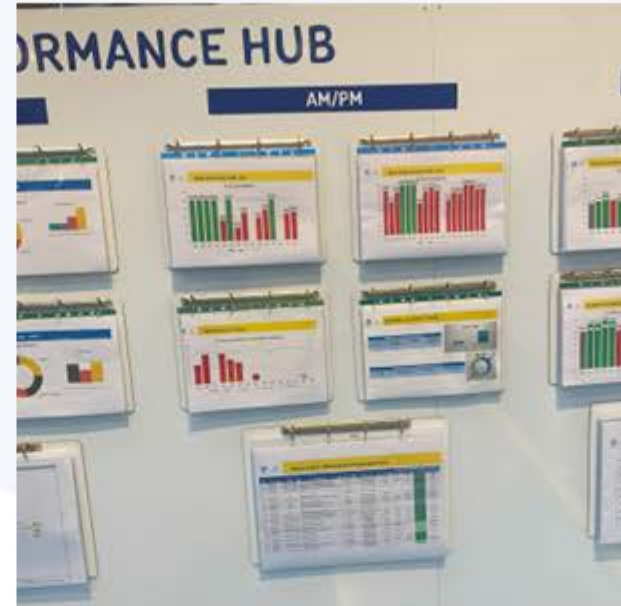
The real added value of a “5W1H” analysis is not in filling a form but mainly in team working:

- It brings everyone to the same understanding of the phenomenon (several times in the project team, members may have a different background, knowledge but also perception of the problem)
- It makes easier the data collection phase
- It helps in the choice of the proper Kaizen tool to use
- It is the first moment to analyze the problem and plan the following step (root causes analysis)



Visual Management

- **Group Discussion**
- **What do you have?**
- **How does it help you in your daily routine?**
- **Workbook Page 5**



DAILY MEETING ACTIONS			BURTON
ISSUE	ACTION	OWNER	DUE DATE
1. National Theatre final options N.A. article	Complete PG - short choice	George	21/11
2. Playboard Gap Bridge Bath Wash	- ERM or external Ball	A.C. N.S.	19/11
3. Alford Fly 130 memory fault	Block them to leave on site	A.C.	19/11
4. ...	Validate on board	N.S. (S.A.C.)	18/11
5. ...	Check upstart	All	19/11
6. ...	Check low control	All H. Goring	14/11
7. ...	Communications Check	A.C. Gullbrook to ...	19/11
8. ...	Check for ...	George	14/11
9. ...	Check ...	George	14/11
10. ...	Check ...	George	14/11
11. ...	Check ...	George	14/11
12. ...	Check ...	George	14/11
13. ...	Check ...	George	14/11
14. ...	Check ...	George	14/11
15. ...	Check ...	George	14/11
16. ...	Check ...	George	14/11
17. ...	Check ...	George	14/11
18. ...	Check ...	George	14/11
19. ...	Check ...	George	14/11
20. ...	Check ...	George	14/11

Leading Improvement

Change and overcoming resistance

Leading Improvement



The Change Equation

$$R = Q \times A$$

Results = Quality x Acceptance

Results of any Change are driven from
the Quality of the solution
and the Acceptance of that solution

And if we do not manage change well?

	+	Guiding Coalition	+	Communicated Vision	+	Broad Based Action	+	Short Term Wins	+	Consolidated Gains	=	Rejection
Sense of Urgency	+		+	Communicated Vision	+	Broad Based Action	+	Short Term Wins	+	Consolidated Gains	=	Chaos
Sense of Urgency	+	Guiding Coalition	+		+	Broad Based Action	+	Short Term Wins	+	Consolidated Gains	=	Confusion
Sense of Urgency	+	Guiding Coalition	+	Communicated Vision	+		+	Short Term Wins	+	Consolidated Gains	=	Frustration
Sense of Urgency	+	Guiding Coalition	+	Communicated Vision	+	Broad Based Action	+		+	Consolidated Gains	=	Slowness
Sense of Urgency	+	Guiding Coalition	+	Communicated Vision	+	Broad Based Action	+	Short Term Wins	+		=	Demotivation
Sense of Urgency	+	Guiding Coalition	+	Communicated Vision	+	Broad Based Action	+	Short Term Wins	+	Consolidated Gains	=	Change

Leading change future state



Leaders can *provoke* change!



How do we challenge the status quo?



Organisations don't change – people do.



Create changes to which others must react – be a role model



People defend and resist – align, engage and let them be great!

The Pioneers



The Joiners



The Early Minority



The Late Majority

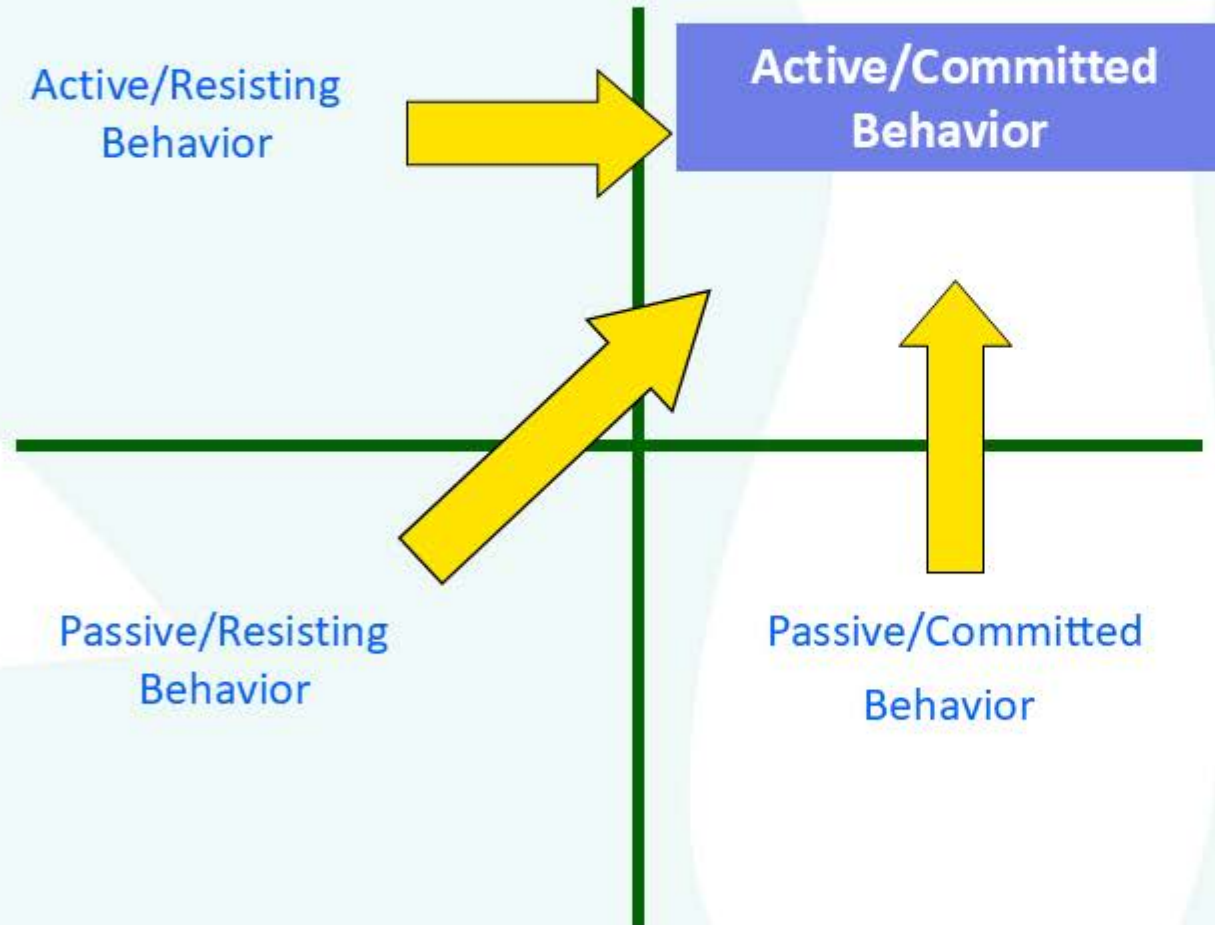


The Laggards



How People Respond to Change

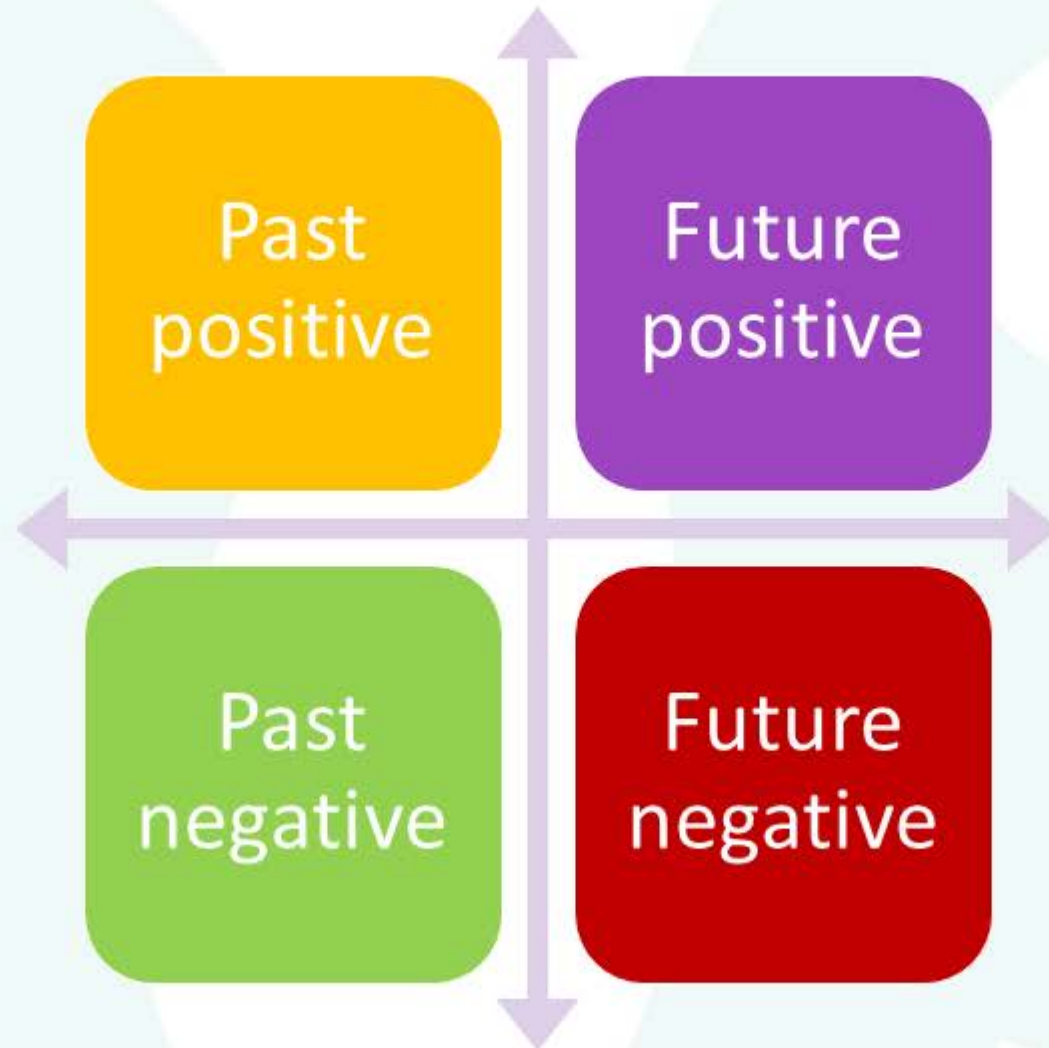
Workbook Page 6



Expedite the Time from Resistance to Commitment through?

- Communication
- Asking Questions
- Team Input
- Team Buy In
- Team Ownership
- Training
- Participation in process
- Results

Psychology of change



Change Reflection

Consider a change you have gone through in a business or team.

Try to remember the way you felt when:

- You first learnt of the change
- When processes/ symbols started to change
- How you feel looking back



Change at a Personal Level



How do you respond to change?



Everyone responds differently



As a manager it is important to understand how you respond

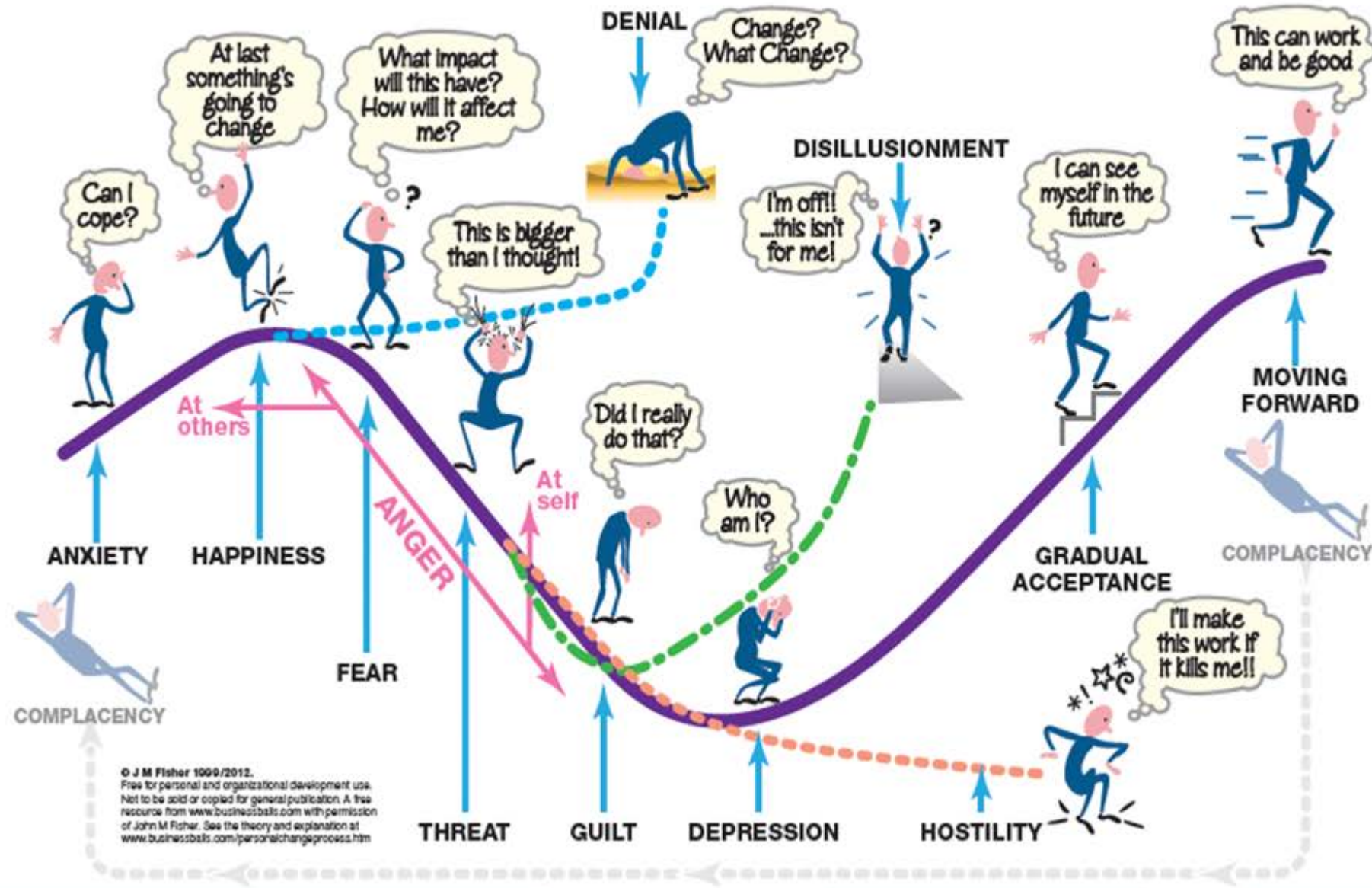


What do your team say about the way you manage change?



Never underestimate the influence you have on your team

Emotional Response to Change



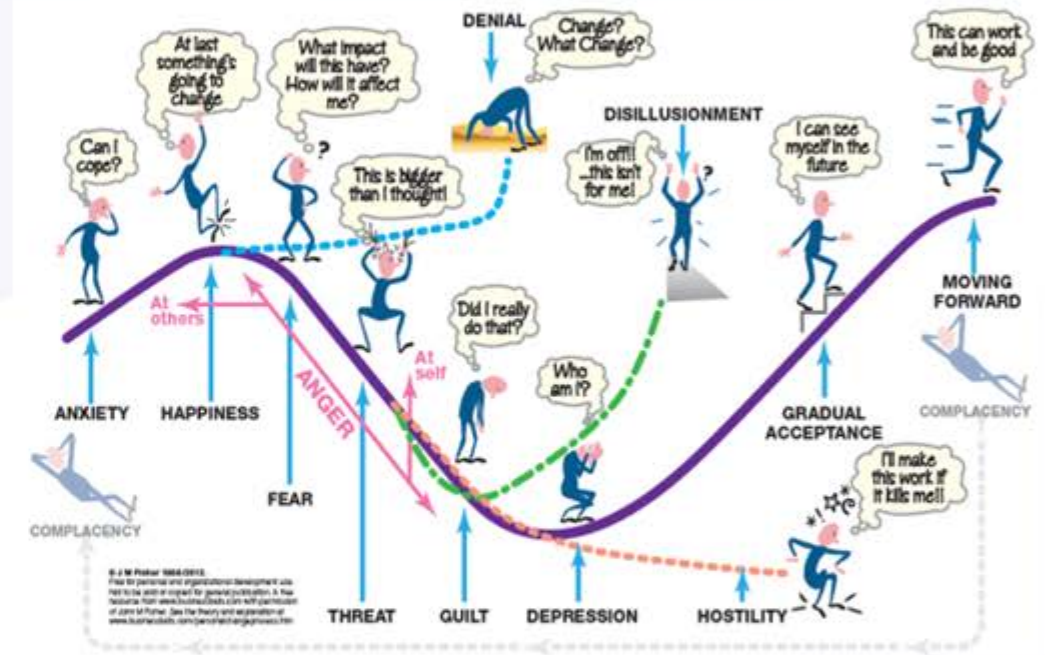
Activity - Emotional Response to Change

For the responses assigned by your facilitator

What would be the key signs that someone was at that stage?

What would your approach be as the manager to help them move towards acceptance of the change?

Workbook Page 7



Problem Solving & Improvement

– Summary

Introduction to Improvement Practices



Voice of the Customer



Root Cause Tools



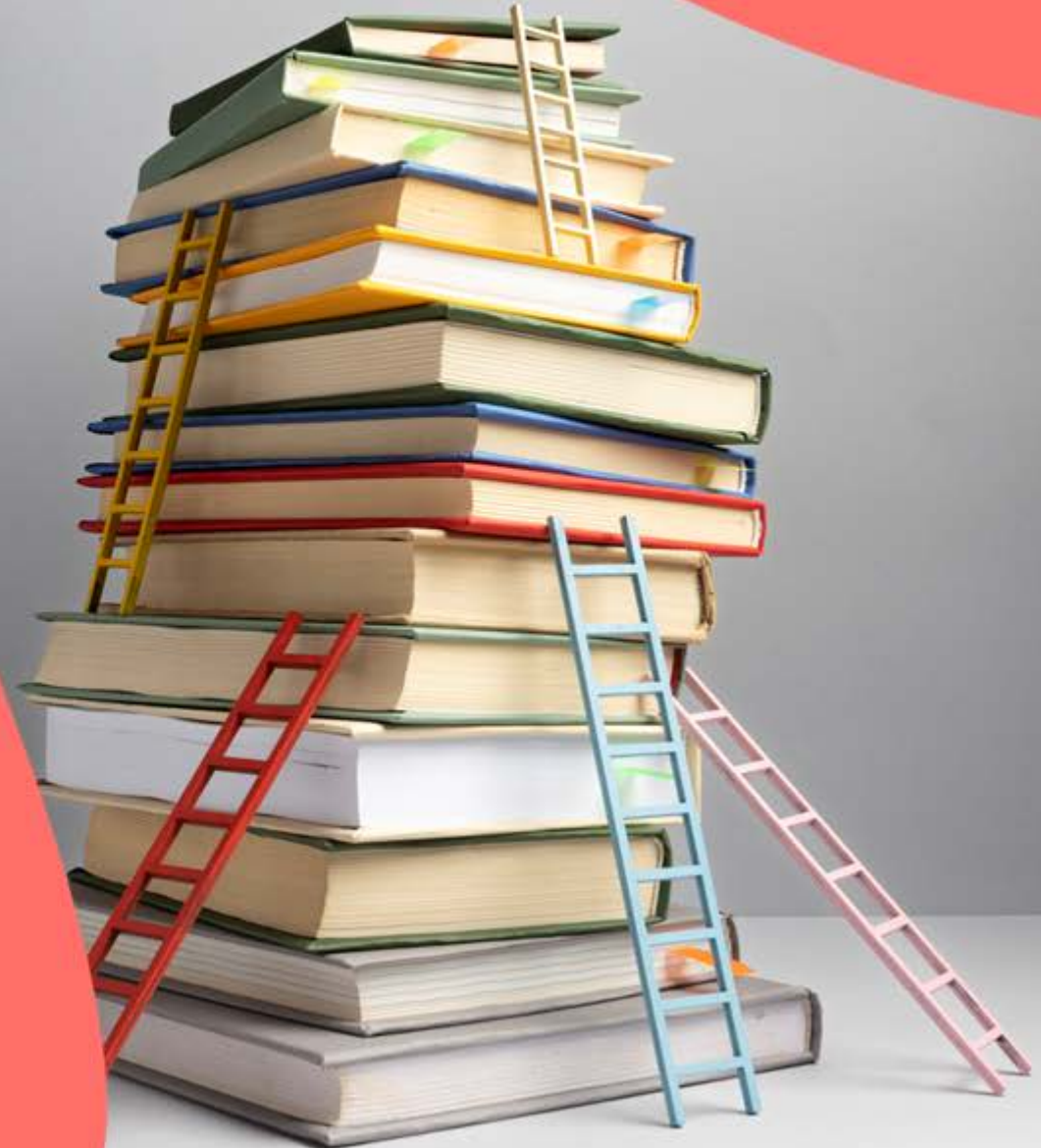
Leading Improvement



Application Practice

This activity is for your application practice – to take your learnings into the daily routine.

- Identify an opportunity for improvement with your team
- Plan and execute the improvement using the tools we have discussed
- Remember change management as well!
- How did the team react and what did you learn?
- We will review your feedback during our next session. Good luck!
- Workbook Page 8



COMMIT TO ACTION

STOP START CONTINUE

One thing I should stop doing / do less of

One thing I would like to start doing / do more of

One thing I should continue doing

Workbook Page 9

