

Practical Lean Process Improvement

By

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Training Objectives

- Increase understanding of continuous process improvement (CPI).
- Understand how to use continuous process improvement tools.
- Understand that teamwork is essential for continuous process improvement.
- Understand how simple tools and techniques increase our chances for continuous process improvement success.

Lean Practical CPI Tools

- Waste Identification and Elimination (TIMWOOD)
- Brainstorming
- 3C's (Cause, Concern, Countermeasure)
- PDCA (Plan, Do, Check, Act)
- 5S's (Sorting, Set in order, Shine, Standardize, Sustain)

TEAMWORK



Types of Business Activities

Value Added Activity [VAA]: (Maximize)

An activity that increases the value of a service or product. A customer must be willing to pay for it to be considered “value added”.

Non-Value Added [NVA]

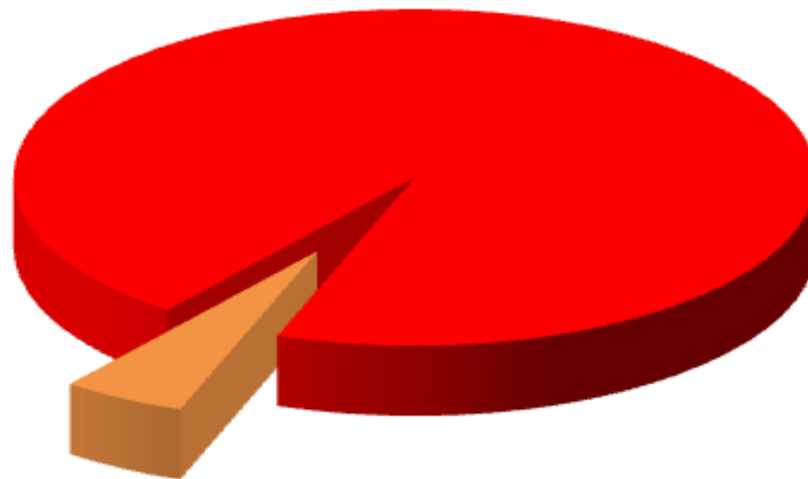
Required: (Minimize/Optimize)

Any work carried out which is necessary, but does not increase the product value. A customer does not pay.

Not required - Waste: (Eliminate)

All other non-essential activity.

Types of Business Activities



**95% Non-Value
Added
5% Value-Added**

Types of Waste

Transport

Inventory

Motion

Waiting

Overproduction

Over-processing

Defects

An easy way to
remember the 7
main wastes is

TIMWOOD

Types of Waste

Transport

Any material movement that does not directly support a synchronous manufacturing or service system

CAUSES

- Large batch size
- Uneven planning
- Lack of workplace organization (6S/5S)
- Poor communication

Inventory

Any supply in excess of process requirements necessary to produce goods or services, "Just in Time."

- Prior stock outages
- Incapable suppliers
- Long lead times
- Management decisions
- Local availability
- Inaccurate planning

Motion

Any movement of people or equipment which does not add value to the product or service.

- Layout of office, warehouse, or yard
- Lack of workplace organization (6S/5S)
- Inconsistent work methods
- Inconsistent batch sizes

Types of Waste

Waiting

Idle time that is produced when two dependent variables are not fully synchronized.

CAUSES

- Inconsistent work methods
- Poor process discipline
- Lack of appropriate machines
- Poor coordination
- Poor planning
- Poor visibility

Overproduction

Having excess equipment versus future demand/customer needs

- Blindly servicing product A when product B is in greater demand and in shorter supply
- Poor planning
- Lack of co-ordination/communication

Over-processing

Effort which adds no VALUE to a product or service.

- Decision making at inappropriate levels
- Ineffective standards or procedures
- Lack of customer input concerning requirements.

Types of Waste

Defects

Equipment or service which does not fulfill customers requirements.

CAUSES

- Inadequate training/experience
- Extreme pressure
- Lack of proper information/communication
- Incapable resources
- Deviation from standard operations

Brainstorming

- **What**

- A structured method of generating ideas and engaging a team in the improvement process

- **Why**

- Brainstorming produces many ideas/solutions in a short time
- Facilitates the creative thinking process
- Separates idea generation from challenging, debating, and analysis

- **How**

- Review the problem definition
- Clarify the goal/question and provide any relevant information
- Have participants write down ideas as they think of them
- Gather ideas, round-robin, one at a time, via post-it notes &/or flip charts - *No discussion of ideas until session is complete*
- Write down every idea
- Organize ideas into groups and prioritize the group with the higher relevance

3 C's – Concern, Cause, Countermeasure

To illustrate this difference, consider a visit to your doctor.:

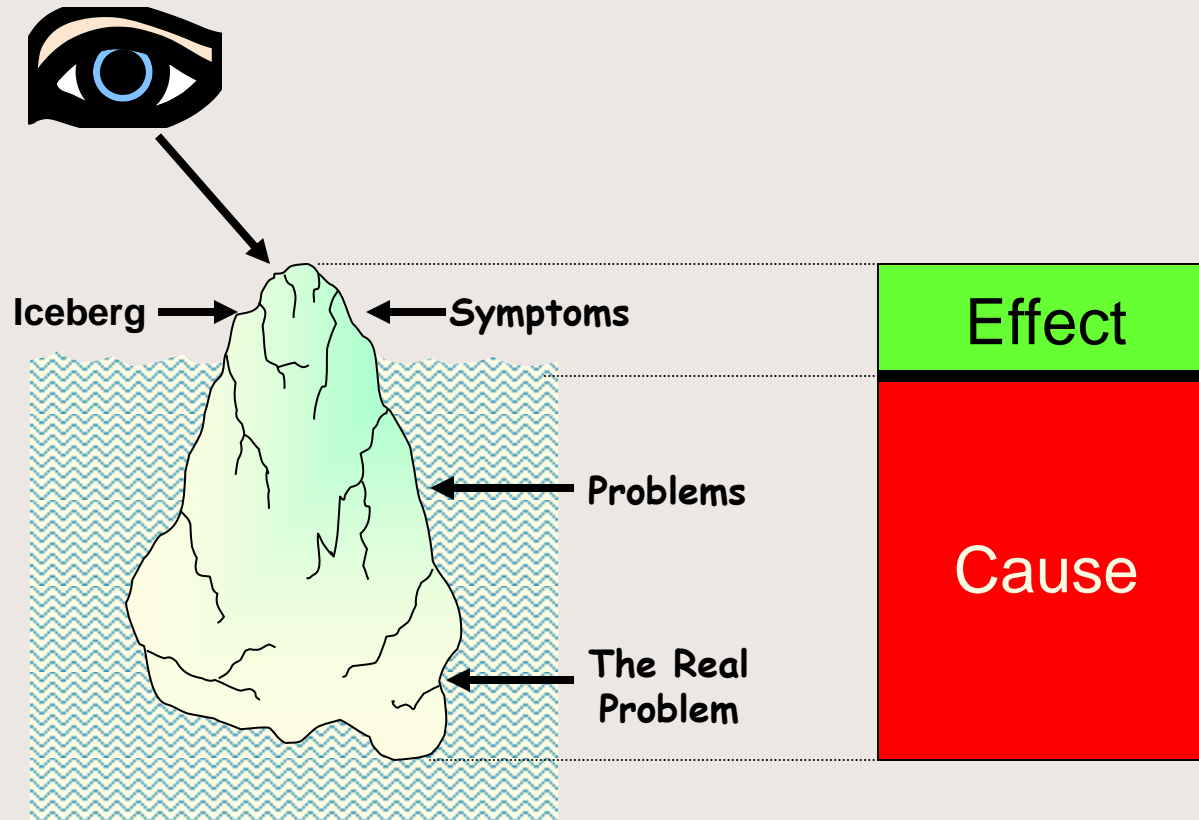
- You feel like you have a cold, runny nose, headache, etc.
- You visit the doctor
- The doctor diagnoses a sinus infection, gives you medication to relieve it. The cold symptoms and headaches eventually fade and the condition subsides.
- A month later the condition recurs. You pay another visit to the doctor and are prescribed the same medication.



3 C's – Concern, Cause, Countermeasure

- This remedy clears up the symptoms of the problem but does nothing to eradicate the cause.
- Relate this situation to your work environment and you will realize the effort and resources being wasted are doing nothing more than relieving the symptoms for a period of time.
- In the majority of cases when first examining a problem, we see the effect of the problem (the cold/headache) and not the cause (the allergies).

3 C's – Concern, Cause, Countermeasure



Problem Recognition Examines the **EFFECT** not the **CAUSE**

Brainstorming

5 WHYs

- **Why are you getting sick?**
 - I am getting a cold
 - I am getting a sinus infection
- **Why are you getting a cold and/or sinus infection?**
 - I was exposed to a cold virus
 - My sinuses over secreted phlegm
- **Why your sinuses over secreted phlegm?**
 - Allergy reaction
- **Why are you having allergy reactions?**
 - I am being exposed to allergens
- **Why are you being exposed to allergens?**
 - I like the outdoors

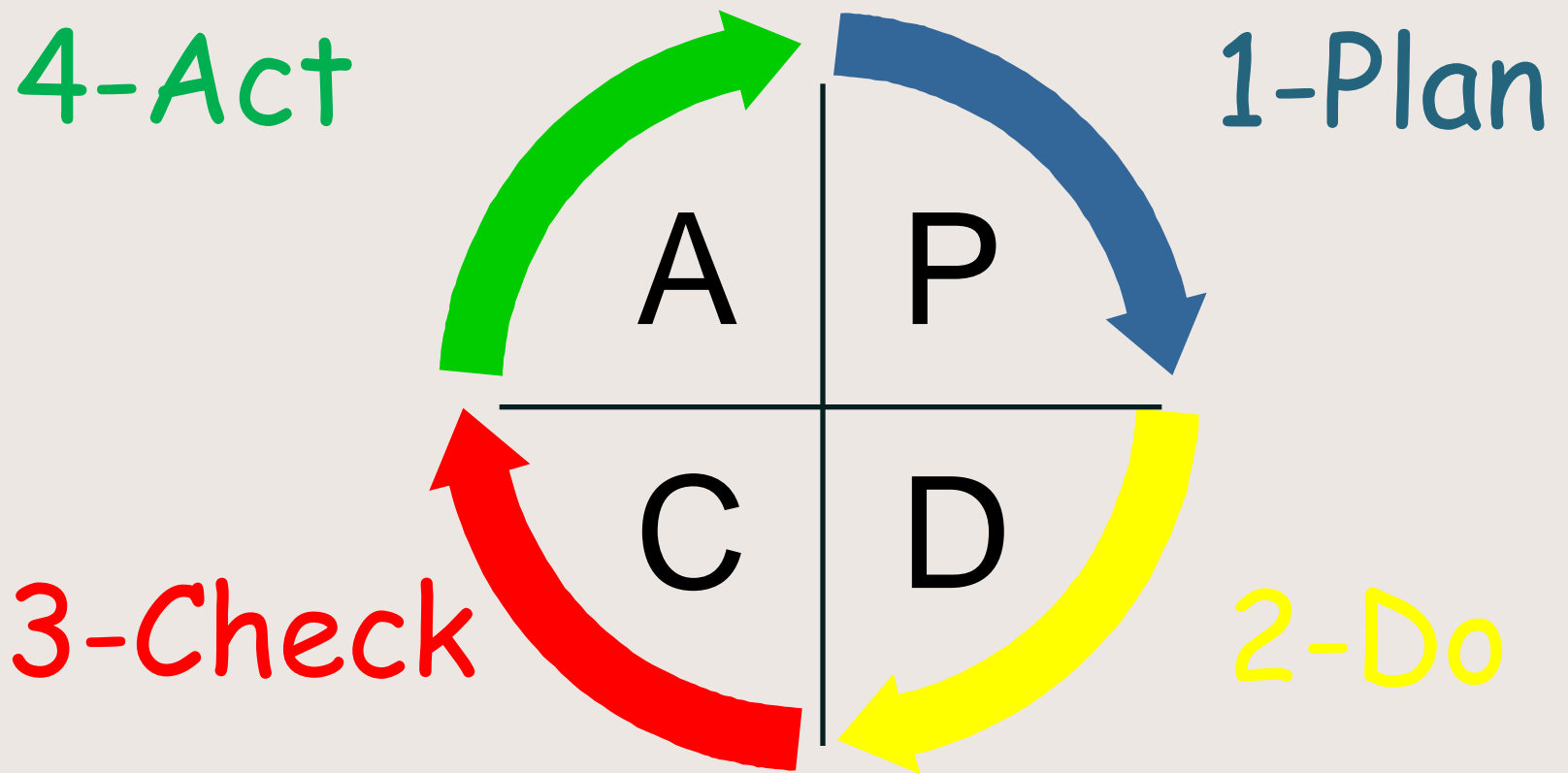
3 C's – Concern, Cause, Countermeasure

BRAINSTORM

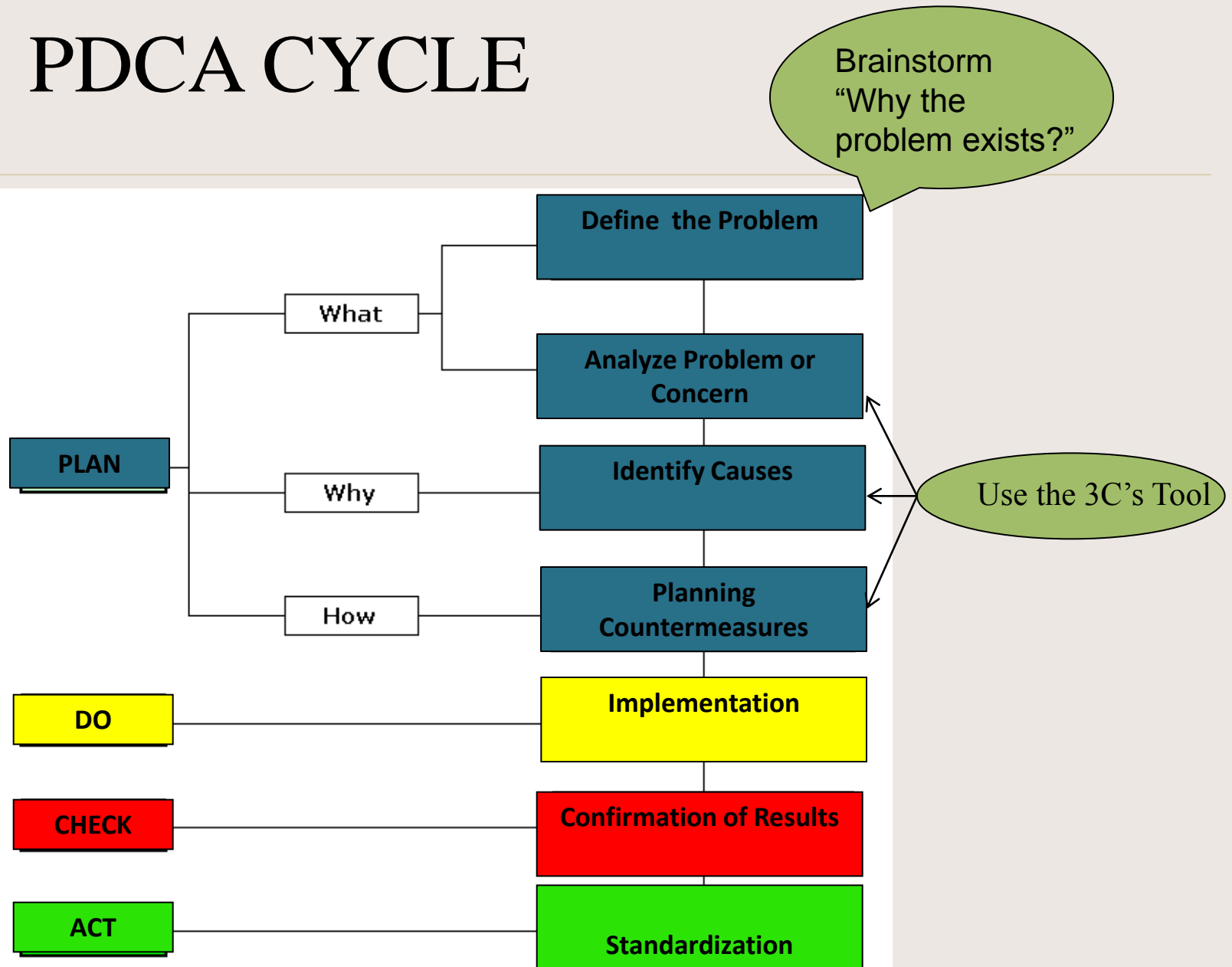
- Cold
- Sinus Infection
- Allergies

CONCERN	CAUSE	COUNTERMEASURE
Getting sick	Cold	Take cold medicine
	Sinus infection	Take antibiotics
	Allergies	<ul style="list-style-type: none">- Take antihistamine- Immune-therapy shots- Prevent exposure to allergens

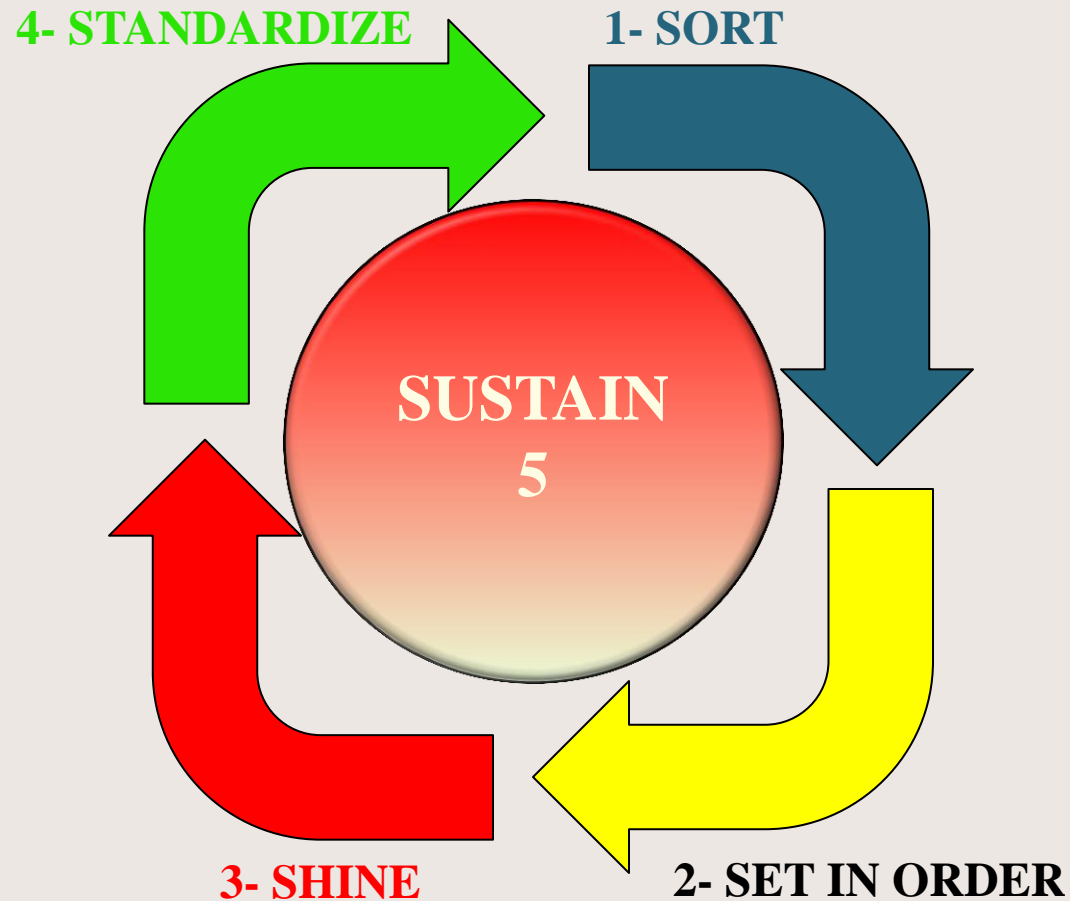
PDCA CYCLE



PDCA CYCLE



5 S's CYCLE



5 S's CYCLE

4- STANDARDIZE

Adapt and create a habit (repetitive and consistent) of the method used for Sorting, Set in order and shine

3- SHINE

Keep area clean and neat



1- SORT

Distinguish needed items from unneeded and eliminate the latter

2- SET IN ORDER

Keep items in the correct place for easy access

References/Bibliography

- *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*
- *The Project Management Institute Website*
- *Exploring Requirements: Quality before Design* by Gerald Weinberg
- *Successful Project Management –Step-by-Step Approach with Practical Examples* By Milton D. Rosenau, Jr.
- *DSDM ATERN Handbook (Agile Project Management)*
- *Many others....*

Credentials

- *J. Miguel Hidalgo:*
 - *Master in Business Administration*
 - *B.S. in Computer Science*
 - *B.S. Professional Aeronautics*
 - *Certified DSDM Agile Project Management Foundations by APM Group (UK)*
 - *Certified Project Management Professional (PMP) by PMI*
 - *Certified Lean Sigma Black Belt (Ohio State University)*
 - *U.S. Army Veteran*

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Q & A