WORKSHOP & TRAINING

PDCA Cycle & Quality Improvement Tools

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Training Objectives

Introduce the concept of PDCA CYCLE as a Quality Improvement tools

Training outline

- Introduction of Quality Improvement.

- Differences between Quality Improvement and Quality Assurance.

- Introduction of PDCA Cycle.

- History of PDCA Cycle.

- Steps of PDCA cycles

- Effective implementation of PDCA cycles

Introduction of Quality Improvement

- A formal approach to the analysis of performance and systematic effort to improve it.

- It is different from Quality Assurance.

- Its aims to achieve levels of performance which are unprecedented – levels which are significantly better than any past level. The methodology consists of a process."

Difference between Quality improvement and assurance

QUALITY IMPROVEMENT

- What can we do to improve.
- Proactive.
- Avoids blame.
- Foster System changes.
- Focus on the entire system

QUALITY ASSURANCE

- What went wrong.
- Reactive
- Often punitive.
- Tries to find who was at fault.
- Focuses on the specific incident.

Introduction

- The Plan-Do-Check-Act cycle is a model for carrying out change. It is a simple four-stage method that enables teams to avoid recurring mistakes and improve processes. It is an essential part of the Lean manufacturing philosophy and a key prerequisite for <u>continuous improvement</u> of people and processes.

- First proposed by Walter Shewhart and later developed by William Deming, the PDCA cycle became a widespread framework for constant improvements in manufacturing, management, and other areas.

- Now that we've explained the PDCA's meaning let's explore the topic further and learn more about this problem-solving model.

PDCA Cycle as Quality Improvement Tools

Brief History of PDCA

- The American statistician and physicist <u>Walter Shewhart</u> is considered the father of PDCA. He was passionate about statistical analysis and quality improvement, and he built the foundation of PDCA recorded in numerous publications.

- At first, he developed a 3-step repeating cycle for process improvement also known as "the Shewhart cycle". The three phases of this cycle were: Specify >> Produce >> Inspect

- Years later, inspired by Shewhart's ideas, <u>William Deming expanded the model</u> into a learning and improvement cycle consisting of the following steps: Design >> Make >> Sell >> Test.

Steward cycle and Deming Cycle

This model was redesigned by the Japanese Union of Scientists and Engineers (JUSE) in 1951 and became what we know today as a PDCA cycle.
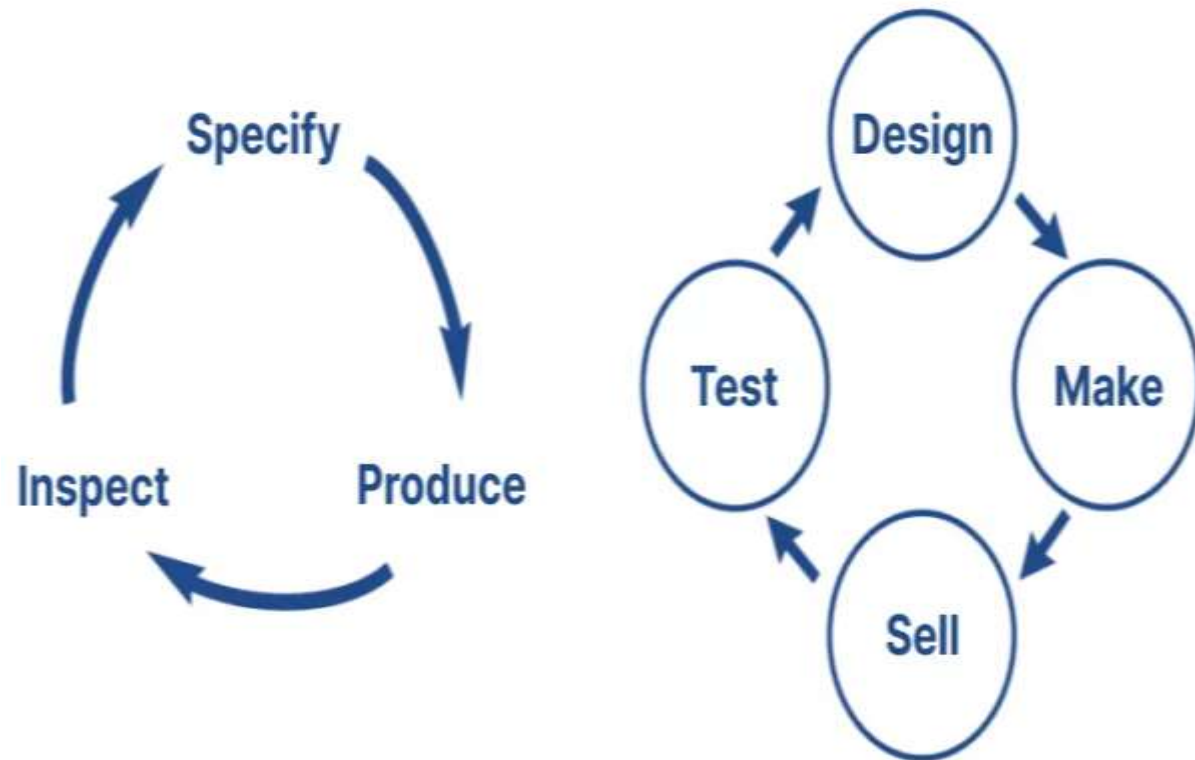
Plan- Do - Check- Act Cycle

Take actions to continually improve the QMS performance to achieve the intended outcomes

ACT
Evaluate
Correct

PLAN
Define
Prepare
Document

Establish objectives, programs and processes necessary to deliver results in accordance with the organization's QMS policy
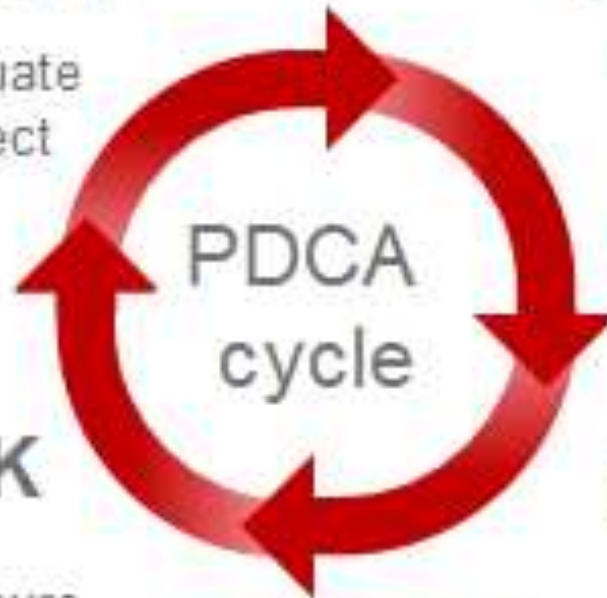
PDCA cycle

CHECK
Measure
Compare

DO
Execute
Record

Monitor and measure activities and processes with regard to the QMS policy and objectives, and report the results

Implement the processes of the QMS

Step 1: PLAN

- At this stage, you will literally plan what needs to be done.
- Depending on the project's size, planning can take a major part of your team's efforts.
- It will usually consist of smaller steps so that you can build a proper plan with fewer possibilities of failure.
- It will allow you to collect enough information before you decide to proceed.

Before you move to the next stage, you need to be sure that you answered some basic concerns:

- What is the core problem we need to solve?
- What resources do we need?
- What resources do we have?
- What is the best solution for fixing the problem with the available resources?
- In what conditions will the plan be considered successful? What are the goals?

Step 2: Do

- After you have agreed on the plan, it is time to take action. At this stage, you will apply everything that has been considered during the previous stage.

- Be aware that unpredicted problems may occur at this phase. This is why, in a perfect situation, you may first try to incorporate your plan on a small scale and in a controlled environment.

- Standardization is something that will definitely help your team apply the plan smoothly. Make sure that everybody knows their roles and responsibilities.

Step 3: Check

- This is probably the most important stage of the PDCA cycle

- . If you want to clarify your plan, avoid recurring mistakes, and apply continuous improvement successfully, you need to pay enough attention to the CHECK phase.

- This is the time to audit your plan's execution and see if your initial plan actually worked.

- Moreover, your team will be able to identify problematic parts of the current process and eliminate them in the future. If something goes wrong during the process, you need to analyze it and find the root cause of the problems.

Step 4: Act

- Finally, you arrive at the last stage of the Plan-Do-Check-Act cycle. Previously, you developed, applied, and checked your plan. Now, you need to act.

- If everything seems perfect and your team managed to achieve the original goals, then you can proceed and apply your initial plan.

- It can be appropriate to adopt the whole plan if objectives are met. Respectively.

- Your PDCA model will become the new standard baseline. However, every time you repeat a standardized plan, remind your team to go through all steps again and try to improve carefully.

Effective Implementation of PDCA

- Implementing the PDCA cycle effectively requires attention to detail and a structured approach.

- To get the most out of it, there are a few good practices to follow for each stage and overall.

  a) **Effective Do Stage -** To minimize risks, test the proposed changes on a small scale before rolling them out company-wide. Ensure that you have all necessary resources, including time, budget, and, most importantly, people, to effectively implement the planned changes and achieve desired results

  b) **Consistent Check Phase -** Don't just collect data; analyze it. Define critical for your process metrics to measure the impact of the implemented changes and whether they are delivering the expected results.

  c) **Actionable Act Stage -** If the changes are successful, document and integrate the new standard operating procedures into regular workflows. If the changes did not meet expectations, analyze why they failed and what can be improved.

- Ensure top-level management support.

- Share lessons learned with all employees.

- Don't stop after the first run of the cycle. Instead, install it as a recurring task in your team and organization's operations for continuous improvement of your processes.

- Leverage digital tools and software to facilitate data collection, analysis, and tracking of PDCA cycles.

Continuously Improving through PDCA

- The PDCA cycle is a simple but powerful framework for fixing issues on any level of your organization.

- The repetitive approach helps your team find and test solutions and improve them through a waste-reducing cycle.

- The PDCA process includes a mandatory commitment to continuous improvement, and it can have a positive impact on productivity and efficiency.

- the PDCA model requires a certain amount of time, and it may not be appropriate for solving urgent issues
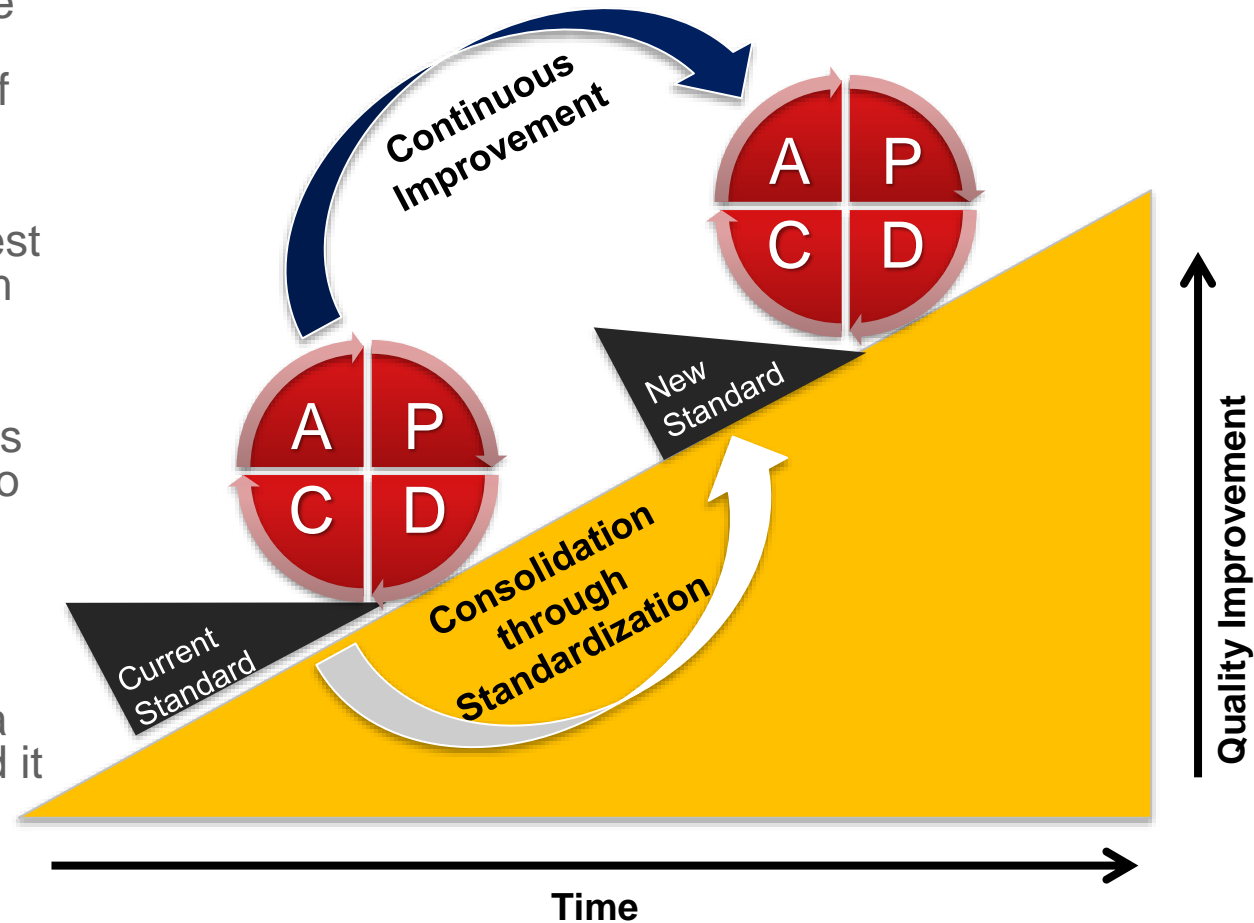
Why Is PDCA Important for Your Business?

- It is widely used for problem-solving and to create quality process improvements.

- It allows teams to identify and remove defects early in the process and restart the cycle until the desired outcome is reached.

- It increases efficiency and eliminates ineffective elements until the optimal solution can be identified.

- Organizations can use this model to gather relevant information before considering whether to progress with a plan or make improvements.

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