THE CONCISE GUIDE TO PROBLEM SOLVING (1/5)

Selecting the appropriate method → PDCA → QRQC → A3 → DMAIC

What constitutes problem solving?

Let us begin by defining a problem: it is a disparity between an unsatisfactory current state (observable and measurable) and a desired state. Problem-solving, therefore, involves narrowing this gap.

	Selection criteria	Method	Place	Team	Duration
1 Selecting the appropriate method	Basic issue (intra-service)	Establish or amend a standard to educate the relevant individuals.	Local	Individually or in pairs	2 weeks
2 PDCA					
3 QRQC	Intricate challenge, swift response	Swift resolution through field animation rituals	Transverse	4 to 5	1 month
4 Format A3	Intricate issue, additional examination	Structured methodology with formalization on A3 support	Transverse	4 to 5	1 month
5 DMAIC	Collection of intricate challenges	Standardized methodology within a multi-disciplinary team	Global	8 to 12	3 to 6 months

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THE CONCISE GUIDE TO PROBLEM SOLVING (2/5)

Selecting the appropriate method → **PDCA** → QRQC → A3 → DMAIC

What does PDCA stand for?

PDCA (Plan-Do-Check-Act) is a four-step methodology for continuous improvement: Devise a strategy, Execute the strategy, Evaluate the outcomes, and Sustainably implement the results.

Example

If a team discovers that inadequately calibrated machines are producing defects, it can implement PDCA.

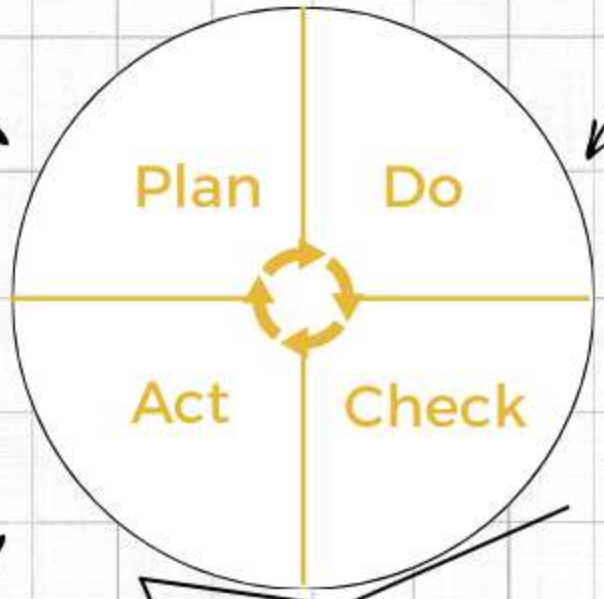
Establish a routine for recalibration, conduct testing over a week, assess the outcomes, and subsequently modify the maintenance plan to achieve a defect rate of less than 1%. If the "Check" phase does not meet expectations, do not hesitate to recommence the cycle at the "Plan" phase.

Plan

- Bread production
- Analyze
- Comprehending the underlying causes of the issue

Do

- Identify resolutions
- Implement them utilizing a driver.



Act

- Implement the comprehensive solution.
- Initiate another cycle if required.

Check

- Examine the outcomes.
- Assess and analyze enhancements

The wedge is the most crucial element, as it prevents a regression into old habits.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THE CONCISE GUIDE TO PROBLEM SOLVING (3/5)

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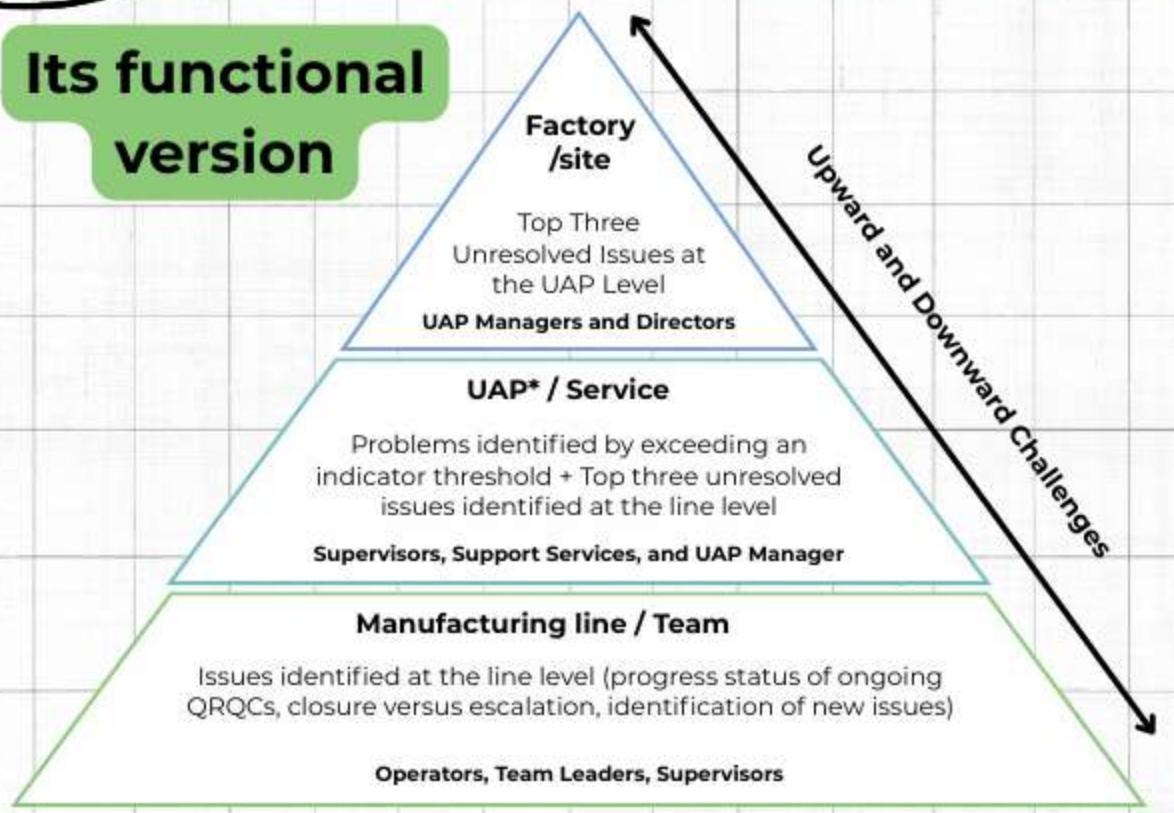
What is QRQC?

A problem-solving system that prioritizes swift responses to issues as they emerge. The more severe the problem, the greater the level of escalation.

Rapid Response: diagnose the issue, define its characteristics, and execute security measures.

Quality Control: systematic and rational analysis to identify a sustainable solution.

Its functional version



The methodology

Identify the issue → Characterize → Secure → Examine the underlying factors. → Implement actions → Capitalize

Quick Response (QR): Guarantee a prompt reaction

Quality Control (QC): In-depth problem resolution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THE CONCISE GUIDE TO PROBLEM SOLVING (4/5)

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Format A3

The A3 was created by Toyota to address challenges.

The designation "A3" was selected due to the method's requirement to prioritize and articulate the problem concisely on a single sheet of paper.

"If it cannot be accommodated on an A3 sheet of paper, you do not comprehend the issue."

It encompasses eight steps, which we will elaborate on below.

A3 is a tool that fosters simplicity and enhances the development of systems thinking for effective problem-solving.

Project Name: Batch Quality Concern | **Project Manager: Thierry Blanc** | **Date: XX/XX/20XX**

1-Problem Description and Scope

Issue Batches of pharmaceuticals are rejected for failing to meet quality standards.

Scope Tablet Production Line No. 3

What is the present situation?

Observations: The batch rejection rate stands at 8%, significantly exceeding the acceptable standard of 1%.

Starting point: Current rejection rate stands at 8%.

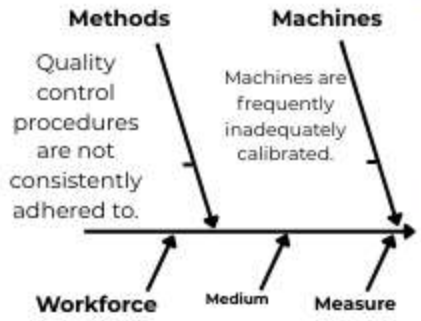
3-What is the aim?

SMART Objective: Lower the rejection rate of products produced on production line 3 to below 1%.

4-Root Cause Analysis

Ishikawa diagram providing an overview of potential causes.

5 Reasons to conduct a thorough analysis of the causes and identify the root cause.



Root cause:

"Absence of a preventive maintenance program with designated accountability, resulting in inconsistent calibrations."

5-Measures

Machine upkeep

- Implement a preventive maintenance program for machinery, incorporating regular calibrations.
- Clearly delineate the responsibilities associated with the management of this program.

Quality assurance of processes

- Standardize quality control procedures to guarantee consistent adherence.
- Enhance operator training regarding the utilization and calibration of production equipment.

6-Implementation and Testing Plan

10/12	15/12	05/01	15/01
Establishment of a maintenance schedule featuring weekly calibrations.	Evaluation of production directives and monitoring documents.	Training of maintenance technicians to adhere to this program.	Implementation of supplementary controls during production.

7-Evaluation of Outcomes

Monitoring of three key performance indicators:

- Batch rejection rate
- Number of calibrations executed punctually
- Number of nonconformities identified during quality audits

8-Standardisation

- Develop comprehensive documentation for the newly established maintenance and quality control procedures.
- Implement consistent training programs for employees.

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THE CONCISE GUIDE TO PROBLEM SOLVING (5/5)

Selecting the appropriate method → PDCA → QRQC → A3 → **DMAIC**

What does DMAIC entail?

DMAIC is an acronym representing the five phases of a problem-solving and improvement process derived from Lean Six Sigma: Define, Measure, Analyze, Improve, and Control.

It is a method of investigation that is experimental, analytical, and scientific, conducted in a project-based format.

To recall

The DMAIC project represents a methodical framework, well-suited for addressing intricate or systemic challenges that necessitate a structured methodology.

Spanning three to six months, this type of project engages a multidisciplinary team and is frequently integrated into a global continuous improvement initiative within the organization.

It necessitates a robust commitment!

D — Define

Establish the objective

M — Measure

Gather data

A — Analyze

Examine the underlying factors.

I — Improve

Propose resolutions

C — Control

Mastering Enhancements

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