

# Recommendations by the Quality Task Group (68): Problems today – tomorrow, how can we solve them?!

## Problem Solving Method (PSM)

The topic of “how do we deal with problems, how does one solve problems” is something that elicited the interest of the Advisory Board/Quality Task Group. In March this year we attended a seminar to get ideas and suggestions on this issue. We have now compiled our findings and are presenting them as Recommendation 68 by the Quality Task Group, so that PSM can be made available to as many workers in everyday practice as possible.

Problems are something we all have and know in our professional and private lives. But what means do we have at our disposal, in particular in the workplace, for addressing and solving these problems? An exciting question that we got to explore in a very realistic exercise during a seminar, while learning about a different methodology for dealing with “problems”.

How do we generally deal with problems “today” (Fig. 1)? How should – can we deal with problems in the future (Fig. 2)?

In this PSM seminar we became acquainted with, and gained experiences of dealing with, problems using systematic, future-oriented methods. After in-depth analysis of the causes of the problem, we defined the main causes on the basis of an evaluation method. To that effect we then worked out solutions, which we also evaluated. Based on our findings, we devised activities for the most effective solutions proposed – and thus experienced a successful/problem solving seminar. Because ... *the beauty of a problem ... lies in the solution.*

One possible procedure for solving problems:

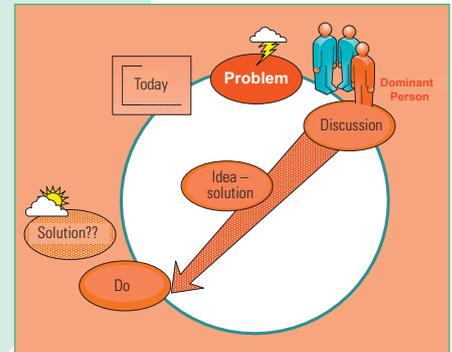
- 1.1 Set targets and define desired state “Set framework target”
- 1.2 Analyse what is our problem, “Methodology e.g. Pareto”
- 1.3 Analyse the main causes of the problem, “Method e.g. Ishikawa diagram” as well as evaluate the main causes, “Methodology, e.g. Pareto”
- 1.4 Collect ideas for tentative solutions, evaluate the solutions, “Method e.g. Brainstorming”
- 1.5 Plan activities for solutions, “Method e.g. activity plan – Gant Plan”
- 1.6 Implement and verify ideas, “Method e.g. activity plan”

Another approach for solving problems occurring during sequential procedures could be: Analyse or depict procedures, “Method e.g. flow chart” in addition to a standardised description of procedures, the main focus is on optimisation of the procedure.

- 2.1 Set targets and define actual – desired state “Set framework target”
- 2.2 Depict desired sequential procedure
- 2.3 Waste – record or depict proposed improvements
- 2.4 Depict improved procedure
- 2.5 Information and training of staff member – team
- 2.6 Locate and implement standard

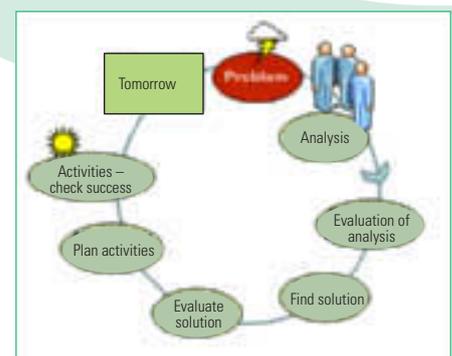
These methods can act as a sort of problem solving schema for all of us when used properly. Problems or waste that can be continually eliminated/reduced are always encountered in our daily lives. You can get input on such methods, e.g. from:

- Quality manager
- Associations
- Working groups
- Companies



**Fig. 1: Today:**

A problem occurs – the problem is discussed in a talk – and one immediately tries to find solutions without analysing the causes – dominant persons have a decisive influence on the solution idea – the solution idea is implemented – the problem reoccurs often in an attenuated, or equally intense, manner – correct solution method chosen – cause found?!



**Fig. 2: Tomorrow:**

- A problem occurs
- Record actual state
  - Define desired state
  - Analyse the problem using a moderation method
  - Evaluate analysis “Find main cause(s)”
  - Find solution for main cause(s)
  - Evaluate solutions
  - Plan solution activities
  - After specified interval, verify activities
  - Check final success. Desired state assured.

- Institutes
- Technical colleges
- Seminars
- Reading materials, technical books

The following proverb can help as a source of inspiration: *Problems are treasures ... let's get to work on them!*

### Key to Index:

**Ishikawa:** all events, problems or states have more than one cause. Virtually always situations arise because of a whole range of influence factors. The Ishikawa diagram (effect– causes diagram) helps identify the most important causes using a systematic approach. For the respective problem, a “problem question” based on 5 headings (5 Ms: “Man, Machine, Method, Materials, Measurements”) is investigated to identify the potential causes using 5 Ws (5 Why questions). The main causes often come to light in the Ishikawa diagram, and can be improved using well-targeted activities or should be evaluated by means of the Pareto diagram.

**Pareto:** when analysing problems and weak links the Pareto diagram helps identify the main causes. The Pareto diagram is based on the principle of the 80/20 rule stating that 80% of a problem can be solved by 20% of causes. This is a tool that helps prioritise the causes by evaluating the causes on the basis of data or frequencies.

**Brainstorming:** brainstorming is a simple, swift and effective method for gaining ideas in groups. Freed from the risk of being judged or criticised, the members of the group can express their ideas on a defined issue. It is a creative tool that can be used in different ways so as to come up with as many ideas or solutions as possible.

**Activity plan/Gant Plan:** it is recommended that an action plan be devised so that the findings from the processing phase can be linked to concrete aims. In this plan is set out what is to be done – until when – by whom. The findings from this action plan are recorded to ensure that they are consistently observed.

**Flow chart:** the flow chart is used to visualise processes and their results. Through visualisation, the unexpected complexity, problem areas as well as superfluous steps and loops are identified, making it possible to simplify and standardise the analysed processes.

In that respect it is important to highlight what activities add value and which do not, and then eliminate or reduce those that do not add value. The flow chart helps compare the actual process stream (actual state) with the ideal desired state.

**Waste:** the classic 7 types of waste are: “overproduction, waiting, (unnecessary) transport, over-processing, inventory, reworking /production defects” which can occur in any production or sequential procedure. In that respect it is also important to evaluate value-adding and non-value-adding activities and eliminate or reduce those that do not add value. ♦