

Problem Solving and Analysis Tools

"5 Why's"

QUALITY TOOLS

5 Why's

Description of 5 Why's

The 5 Why's is a simple problem-solving technique that helps you to get to the root of a problem quickly. The technique was originally developed by Sakichi Toyoda, a Japanese inventor and industrialist. The 5 Why's was used within the Toyota Motor Corporation during the evolution of its manufacturing methodologies and became very popular in the 1970s by the Toyota Production System, and is now used within Kaizen, Lean Manufacturing, and Six Sigma.

The 5 Why's technique involves you to ask why the problem occurred. But don't stop there. Continue to ask 5 'Why's?', or at least continue until you can no longer identify another cause. That is the point where you have found the core of the problem

The 5 Why's strategy involves looking at any problem and asking: "Why?" and "What caused this problem?" Very often, the answer to the first "why" will prompt another "why" and the answer to the second "why" will prompt another and so on; hence the name the 5 Why's strategy. The 5 Why's is simple and easy to learn and apply. It helps you to quickly determine the root cause of a problem. The 5 Why's is one of the simplest tools; easy to complete without any statistical analysis.

When to use the 5 Whys

- When problems involve human factors or interactions.
- In day-to-day business life; can be used within or without a Six Sigma project.

How to use the 5 Whys

1. Describe the specific problem completely so that all members of problem-solving team will have clear understanding of the issue.
2. Ask "Why" the problem occurs and note down the answer below the problem.
3. If the answer just provided doesn't identify the root cause of the problem identified in step 1, ask "Why" again and note down the answer.
4. Repeat step 3 until all the members of the problem-solving team agreed that the root cause of the problem is identified. Again, this may take fewer or more times than five Why's.
5. When looking to solve a problem, start at the end result and work backward (toward the root cause), continually asking: "Why?" You'll need to repeat this over and over until the root cause of the problem becomes apparent.

In manufacturing environments, the 5 Why's is usually done in three different scenarios to solve a single problem. Those Scenarios are termed as "Prevent", "Protect" and "Predict".

Let's assume a defective part reached to the customer and customer lodged an official complaint. Following questions will be asked in 5 Why's for the above three scenarios.

PREVENT: Why the process allowed to make a defective part. What are the flaws in the process so that a defective part was produced. PREVENT section focuses on to the actual manufacturing process.

PROTECT: Why the defective part could not be caught at in-process and final inspection. How the defective part escaped from the system. PROTECT section focuses on to the detection of the defective part at the inspection process. Inspection may be manual or automatic.

PREDICT: Why the system did not predict at initial stage for formation of defective part. Was the failure mode identified in FMEA (Failure Mode Effect Analysis). If identified, what were controls identified to detect failure and why they failed. The PREDICT section focuses on to the identified failure modes and controls placed at very early stage of product development.

[Tips on use of 5 Why's](#)

The 5 Why's technique is a simple technique that can help you quickly get to the root of a problem. But that is all it is, and the more complex things get, the more likely it is to lead you down a false trail. If it doesn't quickly give you an answer that's obviously right, then you may need to use a more sophisticated problem-solving technique such as Root Cause Analysis or Cause and Effect Analysis.

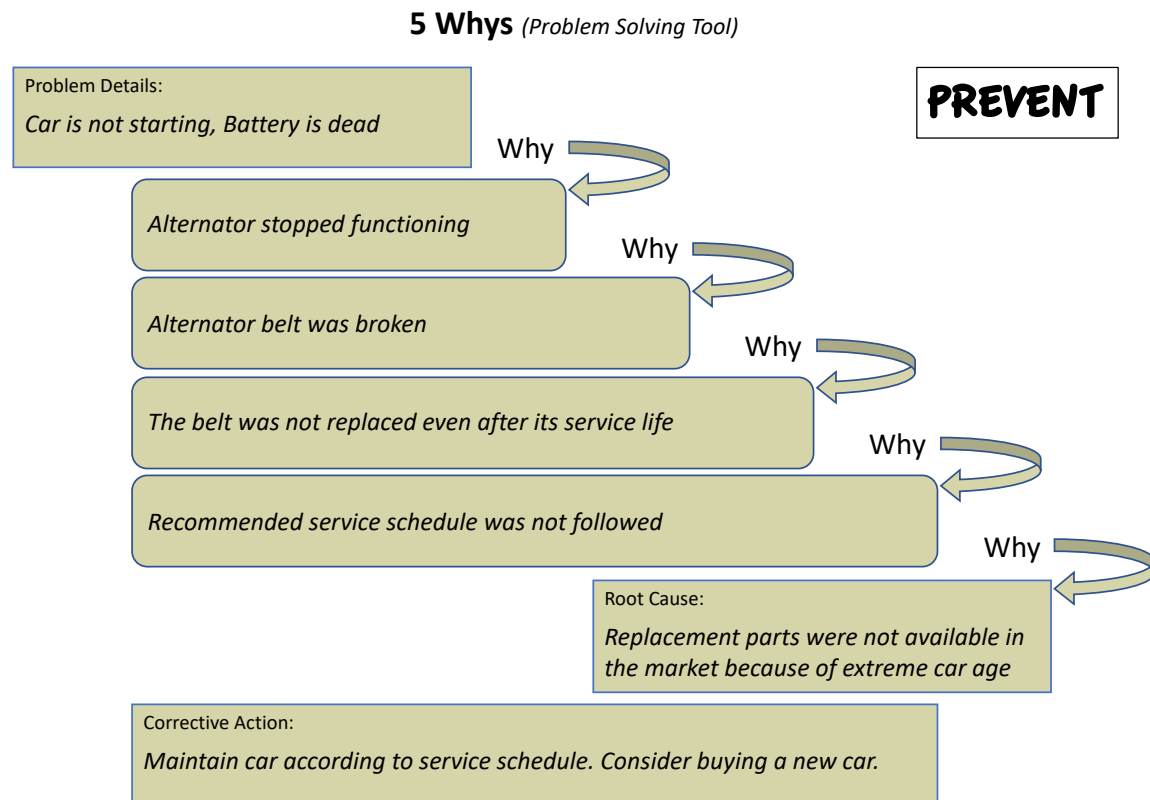
Fishbone diagram or Ishikawa cause and effect diagram is a common tool known for root cause analysis. Fishbone diagram helps to explore all the possible or potential causes that may result in a single defect or failure. The 5 Why's can be used in conjunction with fishbone, cause and effect diagram in such a way that when all inputs are established on the fishbone, the 5 Why's technique can be used to drill down to the root cause(s) of the problem.

As always, it is also very important to have right people in the team to complete the 5 Why's analysis. People from main workforce must need to be involved to dig down to the correct root cause of the problem. Involvement of wrong team members may lead to a corrective action which may not be effective or sustainable.

The benefit of involving the right people in the corrective action team will be allow ownership build up, pride and confidence gain by the team members. This will also improve the effectiveness and sustainability of the corrective action.

Application of 5 Why's

The 5 Whys can be applied to the problem of any area, Manufacturing, Servicing, and day to day related issues. See the following examples.



References:

- **Solving Tough Problems**
By Adam Kahane
- **The Goal: A Process of Ongoing Improvement**
By Eliyahu Goldratt and Jeff Cox
- **GM 's Drill Deep Worksheet**