

Technical Guide on “5 Whys Analysis”



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Table of Contents

1. DISCLAIMER.....	3
1.1 INTRODUCTION TO SMEDA	3
1.2 INDUSTRY SUPPORT PROGRAM	4
2. WHAT IS 5 WHYS ANALYSIS?	5
2.1 EXAMPLE OF A 5 WHY ANALYSIS?.....	5
2.2 WHY IMPLEMENT “5 WHYS” ANALYSIS?.....	7
3 HOW TO IMPLEMENT 5 WHYS ANALYSIS?	7

1. Disclaimer

This information memorandum is to introduce the subject matter and provide a general idea and information on the said matter. Although, the material included in this document is based on data/information gathered from various reliable sources; however, it is based upon certain assumptions, which may differ from case to case. The information has been provided on AS IS WHERE IS basis without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been taken to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA, its employees or agents do not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The contained information does not preclude any further professional advice. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information which is necessary for making an informed decision; including taking professional advice from a qualified consultant/technical expert before taking any decision to act upon the information.

1.1 Introduction to SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in Employment Generation and Value Addition to the national income, through development of SME sectors, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out 'sectoral research' to identify Policy, Access to Finance, Business Development Services, strategic initiatives and institutional collaboration & networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of Business Development Services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need-based capacity building programs of different types in addition to business guidance through help desk services.

For more information on services offered by SMEDA, please contact our website: www.smeda.org

1.2 Industry Support Program

In order to enhance competitiveness of SMEs and achieve operational excellence, SMEDA established an Industry Support Cell (ISC) for provision of foreign technical support and knowledge transfer in collaboration with International Development Organizations. SMEDA's Industry Support Program (ISP) initially launched with Japan International Cooperation Agency (JICA) and actively engaged in reducing energy inefficiencies and improving production and quality of products with the support of Japanese Experts. Later on, similar activities with other international partner organizations like German Corporation for International Cooperation (GIZ), Training and Development Centers of the Bavarian Employers' Association (bfz), Germany, and United Nations Industrial Development Organization (UNIDO) were also successfully implemented.

2. What is 5 Whys Analysis?

Have you ever experience any problem that kept on re-happening? Resolving similar issue multiple times is tiresome and a misuse of important resources. The main question is Why the problem is keep on repeating. The answer is simple that is the root cause of the problem isn't evaluated. If you are not addressing the root cause of the problem, it means that you are only handling the symptom of that problem. Furthermore, in absence of a long lasting solution and its implementation, the issue will keep on repeating.

There is an easy to apply technique that can support in eliminating repeated problems. This technique is the 5 Whys Analysis. It was created during the 1930s by Mr. Sakichi Toyoda. Mr. Toyoda is the pioneer behind Toyota Motor Corporation and Industries. This method is still used frequently till today. Taiichi Ohno, the architect of the Toyota Production System, describes the five whys analysis as “the basis of Toyota’s scientific approach.”

5 whys analysis is a problem-solving method that discovers the underlying causes of a specific problem. The main task is to determine the root cause of a defect or a problem by successively asking the question “Why?”. The number ‘5’ here comes from the observation that five repetitions of asking why is usually sufficient enough to reveal the root cause.

At times, it might take more or less whys, subject to the depth of the root cause.

The 5 Why technique in many cases is utilized during the Analyze step of the DMAIC cycle and the Plan phase of PDCA cycle. It is often used in combination with other analysis tools such as the Cause and Effect Diagram but can also be used as an independent tool. 5 Why analysis is the best when the answers come from the shop floor staff who have practical experience of the process and the problem being examined. By repeating the question “Why” you can drive down to the root cause of the problem.

This is the core idea of the 5 Whys analysis, which not only is helpful as an analysis tool but also is commonly used for troubleshooting, problem-solving and quality improvement for simple to moderately difficult problems. Cause-and-effect analysis also known as (fishbone diagrams) or failure mode and effects analysis (FMEA) may be more effective tools for complex problems.

2.1 Example of a 5 Why Analysis?

In an accident an employee loses the tip of his finger when it's pressed between a drive belt and an unguarded pulley. The first step is to find the problem which is very clear in this case. Keep on inquiring “WHY” about every reaction to a query and when you are as of now not able to further respond to the inquiry you've probably ended up at the main cause of the problem.

1. For what reason was the labourer's finger broken?

Answer: The finger was gotten between a moving pulley and belt.

2. For what reason was the finger gotten between the pulley and the belt?

Answer: The pulley cover was overlooked.

3. For what reason was the pulley cover missing?

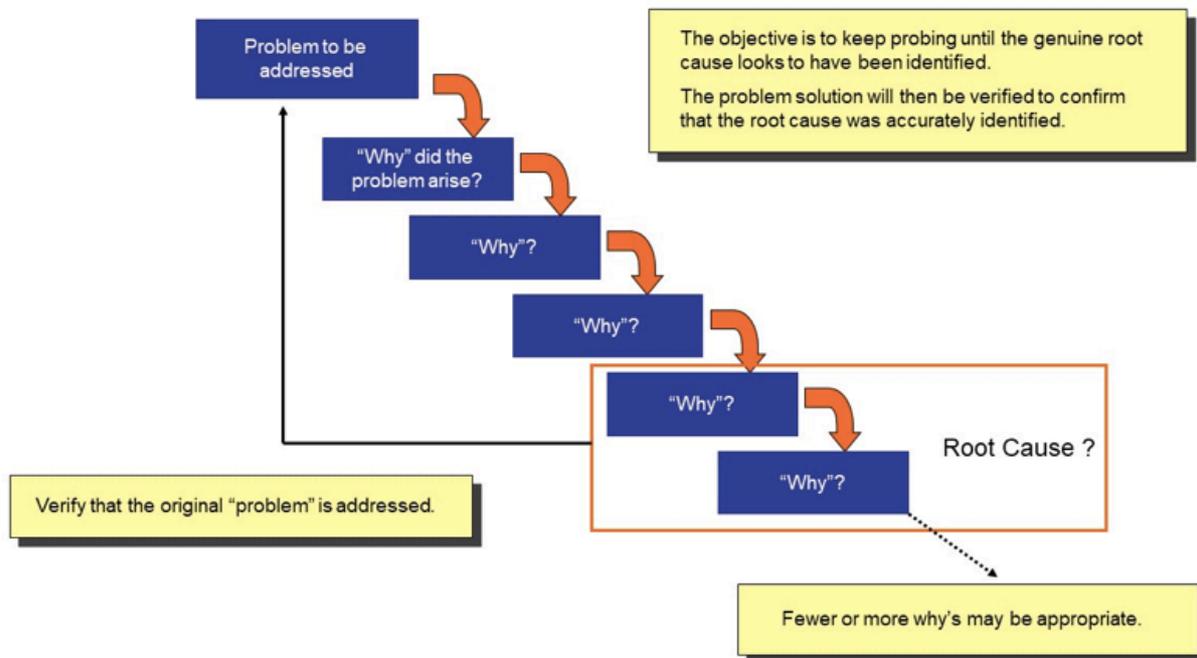
Answer: Maintenance department had neglected changing it.

4. For what reason was it neglected?

Answer: There is no machine preventive maintenance checklist available & implemented.

5. Why is there no preventive machine checklist?

Answer: Lack of hazard identification, risk assessment and its implementation.



2.2 Why Implement “5 Whys” Analysis?

There are many benefits of implementing the 5 Whys analysis and some of them are as follows:

- It is very simple tool for all non statistical analysis.
- It helps in recognizing the underlying root cause of the problem.
- It is highly effective without complicated assessment procedures.
- Identification of solution to one problems helps us understand more about other similar issues.
- It helps in preventing problems from occurring again because of the root cause identification.
- It also helps to identify more problems during the performance analysis of problem using 5 Whys.
- It promotes team work by encouraging team members to share their ideas and expertise.
- It improves decision making

3 How to Implement 5 Whys Analysis?

When carrying out the 5 Whys Analysis at the work place one must keep in mind the following important things:

- Always distinguish the symptoms from causes.
- For the system to work successfully, try using the following the formula. (Why+ and therefore + the problem happened)
- You can question as many whys as you see appropriate and the number can be lower than 5 as well.
- All the responses should be based on reality and factual data. Personal Experiences to be avoided.
- Blame game to others should be avoided during the whole discussion and it is meant for assessing the problems not the people.

Further use the following procedure to run the 5Why Analysis.

- 1. Form a team:** Identify everyone impacted by the problem. Form a team and include those who care most about solving the problem and can help in brainstorming.
- 2. Define the problem:** Write the problem statement that your team agrees on.

3. Ask the first “Why?”: Ask your team why the problem is occurring. This requires serious brainstorming process from the team. Focus on answers that are based on real data and not the guesses.

4. Ask “Why?” four more times: Ask why four more times each time using the previous answer to base your question on. It might be possible you may need to ask why more times than fives if you have not find the root cause of the problem or sometimes the root cause may be identified earlier than 5 whys.

5. Determine the good solution: Knowing when to stop is a valuable part of the process otherwise you will find yourself lost and without finding the right root cause.

6. Fix the root cause of the problem: Once you know the root cause of the problem you can implement solutions to those root causes. Identify the best solutions and discuss how to proceed.

7. See how it works: Once you have applied your solutions to the root causes see what are the outcomes of it. Sometimes it’s perfect and you have solved the key problem or it may need to correct your whys and their causes i.e. some rework is required to find the correct root causes and identify better solution.