Determine the Root Cause: Five Whys


The Five Whys is a technique used in the Analyze phase of the Six Sigma DMAIC methodology. The Five Whys is an excellent Six Sigma tool that doesn’t involve a statistical hypothesis and in many cases can be completed without a data collection plan.

Asking “Why?” may be a favorite technique of your three-year-old child in driving you crazy, but it could teach you a valuable Six Sigma quality lesson. The Five Whys is a technique used in the Analyze phase of the Six Sigma DMAIC methodology. It is an excellent Six Sigma tool that doesn’t involve data segmentation, hypothesis testing, regression or other advanced statistical tools, and in many cases can be completed without a data collection plan.

By repeatedly asking the question “Why” (five is a good rule of thumb), you can peel away the layers of symptoms which can lead to the root cause of a problem. Very often the ostensible reason for a problem will lead to another question. Although this technique is called “Five Whys,” you may find that you will need to ask the question fewer or more times than five before finding the issue related to a problem.

Benefits of The Five Whys

• Help identify the root cause of a problem.
• Determine the relationship between different root causes of a problem.
• One of the simplest tools; easy to complete without statistical analysis.

When Is Five Whys Most Useful?

• Problems involve human factors or interactions.
• Day-to-day business life
• Within or without a Six Sigma project

How to Complete The Five Whys

1. Write down the specific problem. Writing the issue helps to formalize the problem and describe it completely. It also helps a team focus on the same problem.
2. Ask Why the problem happens and write the answer down below the problem.

3. If the answer just provided doesn’t identify the root cause of the problem written down in step 1, ask Why again and write that answer down.

4. Loop back to step three until the team agrees that the problem’s root cause is identified. Again, this may take fewer or more times than Five Whys.

Five Whys Examples

Problem Statement: Customers are unhappy because products shipped do not meet their specifications.

1. Why are customers being shipped unacceptable products?
   - Because manufacturing built the products to a specification that is different from what the customer and the salesperson agreed.

2. Why did manufacturing build the products to a different specification than that of sales?
   - The sales person expedites work on the shop floor by calling the head of manufacturing directly to begin work, instead of following standard procedures. An error happened when the specifications were being communicated or written down.

3. Why does the sales person call the head of manufacturing directly to start work instead of following the procedure established in the company?
   - The “start work” form requires the sales director’s approval before work can begin and slows the manufacturing process (or stops it when the director is out of the office).

4. Why does the form contain an approval for the sales director?
   - The sales director needs continual updates on sales for discussions with the CEO.

In this case, only four Whys were required to find out that a non-value added signature authority is helping to cause a process breakdown.

Let us look at a slightly more humorous example modified from Marc R.’s posting of Five Whys in the iSixSigma Dictionary.

Problem Statement: While on the way home from work and the car stops in the middle of the road.
1. Why did the car stop?
   - It ran out of gas.
2. Why did it run out of gas?
   - Did not buy any gas on the way to work.
3. Why was gas not bought this morning?
   - There was no money.
4. Why was there no money?
   - Lost it all last night in a poker game.
5. Why was the money lost in last night’s poker game?
   - Not very good at “bluffing” when the hand is a losing hand.

As these examples show, the final Why leads the team to a statement (root cause) so that the team can act. It is much quicker to come up with a system that keeps the sales director updated on recent sales or teach a person to “bluff” a hand than it is to try to solve the stated problem.

Five Whys and The Fishbone Diagram

The Five Whys can apply individually or as a part of the fishbone (also known as the cause and effect or Ishikawa) diagram. The fishbone diagram helps to explore all potential or real reasons that result in a single defect or failure. Once all inputs get established on the fishbone, the Five Whys technique drills down to the root causes.

Quote

“If you don't ask the right questions, you don't get the right answers. A question asked in the right way often points to its own answer. Asking questions is the ABC of diagnosis. Only the inquiring mind solves problems."

Edward Hodnett

References
