

Details of Analyse Phase of Six Sigma

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Before we proceed with our topic I would like to clear certain things related to Six Sigma methodology. Some Companies think that Six Sigma is only meant for large Corporates actually it is a misconception Six Sigma can easily thrive in a Small and Medium Size Companies as long as there is a support of the Management and the employees are trained on Six Sigma and the process has to be put in place and later maintained.

Six Sigma has been successfully applied in banking, healthcare, Military Fast Food Chains, airlines, Hotels, retail stores if there's a repetitive process with a problem you can apply Six Sigma.

Below are some basic Questionnaire which can be used by a Six Sigma Consultant

1. List four Problems your business is facing right now?
2. Now think about the day to day operations of your organization list four of the major repetitive processes
3. Next think about the defects affecting your products or services or outputs what four defects you see on a regular basis list them out
4. Finally what variations you see in your business processes list the four variations it might include the differences in the way you do things from day to day or in your outputs

WHAT MAKES A SIX SIGMA IMPLEMENTATION SUCCESSFUL?

The following elements are absolutely essential to successful implementation of Six Sigma

1. Consistent and Visible leadership involvement
2. A measurement system to track progress, providing accountability for the measure
3. Internal and external benchmarking of the organization's products. Services and processes
4. Setting challenging stretch goals that focus your employees on changing the process and not just tweaking it.
5. Educating and informing every member of your organization about the six sigma methodology
6. Developing the infrastructure to support change through ought your organization.

7. Working to create a "cause" not just a business success.

ANALYSE PHASE

In the analyse phase we determine which X's are causing the problem in your critical metrics. When you analyse the data collected during the measure phase of DMAIC (Define, Measure, Analyse, Improve, Control) it is important to estimate the limits within which we can be confident that the small group sample statistics like mean and standard deviation are really telling us about differences in the total population.

There are Certain Steps in the Analyse Phase

Step 1: Localise the problem

To localise something means Pinpoint where and when it appears and it doesn't appear. The basic question to ask is "given all possible X's that would be causing the Y to be a defect in the equation $Y = f(x_1, x_2, \dots, x_n)$ which ones is or are the problem?"

Step 2: State the relationship you are trying to establish.

The goal is to know how the Y that you want to achieve is connected to the X's that you are investigating

Step 3: Establish the Hypothesis

When we establish a hypothesis it's convention to state both a null hypothesis and an alternative hypothesis. Null hypothesis is that there is no difference between the groups you are comparing that the factors or processes or a population is not making a difference. Alternative hypothesis is that the factor like population, samples or parts used are making a difference.

Step 4: Decide on appropriate techniques to test the hypothesis.

There is a graphical hypothesis technique that you can use to test your hypothesis which you can display in the form of graph collected from the measure phase of the DMAIC framework.

Step 5: Test the hypothesis using the data collected in the measure phase of the DMAIC framework of Six Sigma

We need to calculate four things

1. Mean

2. Standard deviation
3. Average plus one standard deviation
4. Average minus one standard deviation

Step 6: Analyse the results and reach conclusion

In this step we determine whether or not we find true differences in the process and without the factor that we hypothesized as being important.

Step 7: Validate the Hypothesis

In Statistical terms, graphs support your confidence in conclusion that any observed differences are real or not

Step 8: Conduct a phase gate review

In the end of the analyse phase the Black belt should report to the executive leaders on the status of the project. The phase gate review also ensures that the team stays focussed and the project stays on track.

AUTHOR

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