



Event Report

Lean Six Sigma – Green belt workshop

Submitted by
Team Prakriya



Date of the workshop: 2nd, 3rd and 5th of October

Venue: Indian Institute of Management, Visakhapatnam

Organizer: Prakriya – The Operations Club, IIM Visakhapatnam

Facilitator: Swapnil Rach, Grant Thornton

Overview:

Prakriya – The operations Club at IIM Visakhapatnam, in collaboration with Grant Thornton, successfully conducted 3 day, Six Sigma workshop. The session was facilitated by Swapnil, from Grant Thornton with extensive experience in process improvement methodologies. The first two days of the event were held online and for the third day it was facilitated in hybrid mode. There were 142 registrations in total.

The workshop aimed to provide participants with a comprehensive understanding of Six Sigma principles, tools, and techniques. The focus was on equipping students with practical skills that can be applied to real-world business challenges to improve quality, reduce variability, and drive excellence. It was also focused that the students from all the domains are able to apply the same in their respective domains.

The session's core lesson was that Six Sigma is applicable outside of traditional manufacturing. In order to highlight how the technique may be applied to other fields, Swapnil presented examples of Six Sigma implementations in sectors like banking, healthcare, and IT. The participants gained knowledge on how to apply Six Sigma technologies to tackle a range of business issues, including cutting down on defects, increasing customer satisfaction, and shortening cycle times.

To improve the educational process, the workshop featured interactive activities in which participants were split up into groups and given assignments involving problem-solving. Through practical exercises, participants analysed problems and suggested solutions using Six Sigma methodologies such as Pareto charts and root cause analysis. These activities exposed the approach in a real-world setting and helped in understanding concepts better.

A thorough examination of actual case studies involving the effective application of Six Sigma techniques and tools was part of the session. Participants were able to observe how Six Sigma principles were used to tackle intricate business problems through the cases that Swapnil presented from a variety of industries. This section offered a useful viewpoint on Six Sigma's effects, demonstrating how it results in quantifiable gains in productivity and quality.



Key Learning: Day one

- Swapnil began the meeting by providing a comprehensive overview of Six Sigma, a methodology that focuses on improving processes by reducing variation and eliminating defects.
- Swapnil explained the Define phase as the initial step in the DMAIC process, crucial for establishing a clear project foundation. This phase focuses on understanding customer needs and project objectives.
- He emphasized the importance of collecting the Voice of the Customer (VOC), which helps to identify what customers value most. This input is essential for translating customer requirements into measurable metrics.
- The development of the Project Charter is a key activity in this phase. It outlines the project's scope, goals, problem statement, and business case, ensuring that all stakeholders are aligned on the project's purpose and direction.

- Swapnil highlighted the need to determine Critical to Quality (CTQ) metrics, which are specific characteristics that significantly impact customer satisfaction. Identifying these metrics allows teams to focus on areas that will enhance quality.
- Mapping the High-Level Process is another critical task in the Define phase. This involves creating a visual representation of the current process to identify potential areas for improvement and clarify how different components interact.
- He also discussed the significance of formulating a clear Problem Statement, which articulates the issue being addressed. This statement should succinctly convey the problem's impact on customers and the organization.
- Finally, Swapnil pointed out that defining roles and responsibilities within the project team is essential for accountability and effective collaboration throughout the project lifecycle. Each team member should understand their contributions toward achieving project goals.
- Introduction to Minitab Software: The workshop's introduction to Minitab, a statistical program frequently used in Six Sigma projects, was one of its main features. In an interesting demonstration of the program's features, Swapnil described how Minitab is essential for data analysis, statistical testing, and control chart creation. Students gained an understanding of Minitab's significance in promoting data-driven decisions through the hands-on demonstration. He also divided the class into groups and gave a case to solve on project charter.

Key Learning: Day two

- Swapnil explained the Measure phase as a vital component of the DMAIC process, focusing on quantifying current performance and establishing a baseline for improvement. This phase is essential for making data-driven decisions.
- He emphasized the importance of understanding types of data, distinguishing between qualitative and quantitative data. This understanding is crucial for effective analysis and interpretation.
- The phase covers data distribution, helping participants recognize how data points are spread across various ranges. This knowledge aids in identifying patterns and potential anomalies.
- Various sampling techniques are introduced to ensure that collected data accurately represents the population. Techniques such as random sampling,

stratified sampling, and systematic sampling are discussed to guide participants in selecting the appropriate method for their projects.

- Measurement System Analysis (MSA) is a key focus, assessing the accuracy and reliability of data collection methods. Participants learn about Gage R&R (Repeatability and Reproducibility) studies to evaluate measurement variation and ensure data integrity.
- Developing a comprehensive Data Collection Plan is emphasized, detailing what data will be collected, how it will be gathered, and who is responsible for collection. This structured approach ensures thorough data acquisition.
- Swapnil introduced participants to Six Sigma calculations, including Defects Per Million Opportunities (DPMO), as well as process capability indices like Cp and Cpk. These metrics are crucial for quantifying process performance and identifying areas needing improvement.
- Understanding variation is also covered, with distinctions made between common cause variation (inherent to the process) and special cause variation (due to external factors). Recognizing these variations is essential for effective problem-solving.
- Graphical tools such as histograms and box plots are demonstrated using Minitab software, allowing participants to visualize data distributions and identify trends or outliers effectively.

Key Learning: Day three

- Swapnil explained the Analyze phase as a crucial step in the DMAIC process, where the focus shifts to identifying root causes of issues. This phase is essential for understanding why problems occur and how to address them effectively.
- He emphasized the importance of reviewing the process map to visualize workflows and pinpoint areas of inefficiency. This helps in understanding how different elements of the process interact.
- Root Cause Analysis (RCA) is a key activity in this phase. Swapnil highlighted that it aims to identify the vital few inputs (X's) that significantly impact Critical to Quality (CTQ) outputs (Y's). This ensures that efforts are concentrated on the most impactful factors.

- He discussed applying Lean principles during this phase to eliminate waste and streamline processes. Techniques such as Pareto Analysis are used to prioritize issues based on their impact, focusing on the "80/20 rule" where a small number of causes often lead to the majority of problems.
- Swapnil also covered the validation of assumptions through hypothesis testing, which allows teams to confirm or refute their theories about root causes based on statistical evidence. This scientific approach ensures that decisions are data-driven.
- The use of correlation analysis is introduced to find relationships between variables, helping teams understand how changes in one factor might affect another. This analysis can lead to more informed decision-making.
- Moving on to the Improve phase, Swapnil explained that this stage focuses on generating and implementing solutions to address identified root causes. Brainstorming sessions are essential for developing innovative ideas.
- He highlighted the importance of conducting Failure Mode and Effects Analysis (FMEA) to evaluate potential failures in processes and their impact, enabling teams to prioritize improvements based on risk.
- In this phase, participants learn to create pilot plans for testing solutions before full-scale implementation. This minimizes risk and allows for adjustments based on real-world feedback.
- Finally, during the Control phase, Swapnil stressed the need for establishing control measures to sustain improvements over time. This includes creating control charts and monitoring systems to track performance metrics continuously.

Feedback:

The feedback was overwhelmingly positive. Participants particularly liked the practical orientation of the session and the introduction to Minitab, which enhanced their understanding of how Six Sigma can be applied to solve real-world business problems. Here are a few of the participants' views.

“The Sigma Workshop was an incredible experience. The tutor presented a variety of new concepts that were easy to grasp. His incorporation of real-life scenarios and case studies made the material more relatable and understandable. Overall, the workshop was outstanding and highly beneficial.”

“I found the workshop to be excellent. Many concepts that I previously struggled to understand became clearer during the sessions. The overall experience was very positive, and I appreciated how wonderful the session was.”

“Before this workshop, I had limited knowledge of Six Sigma and was considering pursuing it further. The session was incredibly interesting and informative. I enjoyed learning new concepts that I was previously unfamiliar with. If time allows, I would love to explore this topic more. Thank you, Prakriya, for conducting such an amazing workshop!”

Here is the folder containing testimonials of the workshop: [Link to the Testimonials](#)