benchmark six sigma
Inspiring Minds, Facilitating Excellence

Benchmark Six Sigma Green Belt

Lean Six Sigma Green Belt Training from Experts. Absolutely best in class.
Learn effortlessly and retain it for long.

This program is our Flagship Program.

- *1100 Batches conducted.*
- *31000+ Professionals Trained*
- *40+ Industry Sectors covered.*
- *50+ Batches every year since 2001*

About Us

Benchmark Six Sigma provides training from Lean Six Sigma Green Belt up to MBB since 2007. We train 250 plus professionals on Green Belt every month

Who do we work with?

We work with clients in many Industry sectors. Some selected clients are shown here.

FMCG – P&G (US),
Pharma - Perrigo
Search – Google
Facility Management – JLL (US)
Liquor – Diageo (Italy
E-commerce - Amazon
Aircrafts – Boeing
Maps – Here Maps
Footwear – Bata (multiple locations)
Electrical - Kirloskar
IT Products - Adobe
Telecom – France Telecom
Digital Marketing - Sapient
Credit Cards – American Express
Energy – Suzlon
Banking – JP Morgan Chase, Bank Dhofar (Muscat), Maubank (Mauritius)
Construction – William Hare (UK)
Elevators - Kone
Cargo - CMACGM
Agro Products – Syngenta, Indofoods (Indonesia)
Software – Siemens Infosoft
Many more -
http://www.benchmarksixsigma.com/content/our-clients

Most of the global leaders that we worked with were the first client in the specific Industry Domain.

Few Basics about Lean Six Sigma

- Lean Six Sigma presents the world's best business problem solving methods in a single capsule. The goal of Lean Six Sigma Green Belt and Black Belt programs is not only to help participants build competence but also to gather practicable understanding so that they can apply the learning at their workplace.
- Lean Six Sigma delivers results through two methodologies DMAIC and DMADV
- The Lean Six Sigma DMAIC sequence (Define, Measure, Analyze, Improve, Control) is an improvement system for existing processes or products for enhanced performance.
- The Six Sigma DMADV process (Define, Measure, Analyze, Design, Verify) is an improvement system used to develop new processes or products at Six Sigma quality levels. It can also be employed if a current process requires breakthrough improvements

Lean Six Sigma Green Belt

Global Acceptance and Body of Knowledge

- Benchmark Six Sigma are Globally Accepted and recognized by Exemplar Global since 2009.
- Benchmark Six Sigma programs have very high industry acceptance with Global Leaders like Google, Amazon, Boeing and P&G as client.
- Exemplar Global started in US and Australia in 1989. Its principal offices are located in Sydney, Australia, and Milwaukee, Wisconsin, in the United States. Additional offices in Brazil, Malaysia, Singapore, South Africa, Indonesia, Seoul, South Korea, China and Vietnam. Exemplar Global is part of ASQ family.
- Benchmark Six Sigma started Lean Six Sigma programs in 2001 while boards started offering accreditation much later in 2008 or 2009
- Next few slides show the Lean Six Sigma Body of Knowledge used by Benchmark Six Sigma.

Competency 1.

Define Lean-Six Sigma

Performance Criteria	Learning Expected
1.1: Explain why Lean - Six Sigma is important for business discussing : • Philosophy of six sigma • Overview of DMAIC • Philosophy of Lean Understand how Lean and Six Sigma work together	Discuss the impact that Lean - Six Sigma has on a business operations, citing the philosophies: • Enablers of change • Measures of quality • Methodologies for improvement
	Discuss the theories of customer focus, data driven, reduction of variation and statistical methodologies.
	Identify waste in terms of, for example: • excess inventory • space • test inspection • rework • transportation • storage, and • reduce cycle time to improve throughput • skills
	Describe project selection process and when to apply DMAIC as opposed to other problem solving tools.
	Describe how projects and kaizen events are selected, when to use Six Sigma instead of other problem-solving approaches, and the importance of aligning their objectives with organizational goals.
	Describe the roles and responsibilities of Six Sigma participants: black belt, master black belt, green belt, yellow belt, champion, process owners and project sponsors.
1.2: Identify Organizational drivers and metrics: • List key drivers for business • Explain the development of metric scorecards	Be able to describe how process inputs, outputs and feedback impact the larger organizations.
1.3: Utilize organizational goals: Project selection	Identify KPI's important to an organisation. Examples can include: • Profit • Market share • Customer satisfaction • Efficiency
	Understand how to create scorecards and metrics to support organizational goals.
1.4 Describe DFSS	Describe DMADV (define, measure, analyze, design, verify) .
	Identify how they relate to DMAIC and how they help close the loop on improving the end product/process during the design phase.

Competency 2.

Apply Change Management Principles

Performance Criteria	Learning Expected
2.1: Describe the steps undertaken in a change management model.	Describe and identify selected organizational change management principles. These can include, for example: • Kotters 8 steps
2.2: Prepare a change management plan.	Document a change management plan that covers methods including: • Stakeholder analysis • Communications plan • Force field analysis
2.3: Define team stages and dynamics: • Team evolution • Identify and resolve negative dynamics	Define and describe the stages of team evolution including: • Forming • Storming • Norming • Performing • Adjourning • Recognition.
	Identify tools which will help resolve negative dynamics such as overbearing, dominant, or reluctant participants, the unquestioned acceptance of opinions as facts etc.
2.4: Define team roles and responsibilities.	Describe and define the roles and responsibilities of participants on six sigma and other teams including: • Master black belt • Black belt • Green belt • Yellow belt • Champion • Executive • Coach • Facilitator • Team member • Sponsor • Process owner
	Understand the relationship between these roles. How they fit in the organization and between each other.
2.5: Define and apply team tools.	Define and apply team tools such as brainstorming, nominal group technique, multi-voting, etc.
2.6: Describe and Apply effective communication.	Identify and utilise effective and appropriate communication techniques for different situations to overcome barriers to project success.
2.7: Describe and Apply Meeting Design.	Identify and utilize effective and appropriate meeting effectiveness techniques for different situations to overcome barriers to project success.

Competency 3.1

Apply DMAIC for Projects – Define

Performance Criteria	Learning Expected
3.1: Outline process elements: • Components • Boundaries	Define and describe process components and boundaries.
	Describe how processes cross various functional areas.
	Identify the challenges that may result from process improvement efforts.
3.2: Identify owners and stakeholders: • Process owners • Stakeholders • Internal customers • External customers • Suppliers	Identify process owners, internal and external customers, and other stakeholders in a project.
3.3: Collect customer data using various methods: • Surveys • Focus groups • Interviews observations • Question construction	Define methods to collect customer data. These can include: • Surveys • focus groups • interviews • observation
	Identify the key elements that make these tools effective.
	Review data collecting questions to identify and eliminate bias, and vagueness.
3.4: Analyze customer data using various methods: • Graphical • Statistical • Qualitative and quantitative tools	Use graphical, statistical, and qualitative tools to analyze customer feedback.
	Assist in translating customer feedback into project goals and objectives, including critical to quality (CTQ) attributes and requirements statements.

Competency 3.2

Apply DMAIC for Projects – Define

Performance Criteria	Learning Expected
	Use voice of the customer (VOC) and voice of the business (VOB) analysis tools to translate customer requirements into performance measures.
3.5: Outline the project charter and project statement: • Project elements • Problem statement	Define and describe elements of a project charter and develop a problem statement, including baseline and improvement goals.
3.6: Develop the project scope.	Describe project definition/scope theories including: • Objectives • Boundaries • In-scope • Out-of-scope
3.7: Develop the project metrics.	Establish key project metrics that relate to the voice of the customer.
3.8: Apply project planning tools	Demonstrate the use of at least one of the following project tools: • Gantt charts • Critical path method (CPM)
3.9: Define and utilize project risk analysis.	Describe the purpose and benefit and impacts of project risk analysis including: • Resources • Financials • Impact on customers and other stakeholders
3.10 Use software to effectively analyze data and manage a project	Describe how software is used for statistical analysis, process mapping, etc.
3.11: Define Tollgate review	Present findings of the define stages in a concise manner.
	Use voice of the customer (VOC) and voice of the business (VOB) analysis tools to translate customer requirements into performance measures.

Competency 4.1

Apply DMAIC for Projects - Measure

Performance Criteria	Learning Expected
4.1: Identify process input and output variables.	Identify process input variables and process output variables (SIPOC), and document their relationships through cause and effect diagrams, relational matrices.
4.2: Develop process modeling: • Maps • Procedures • Flow charts	Develop and review process modelling tools such as process maps, flowcharts against processes.
4.3: Describe basic statistical data: • Population vs sample statistics • Normality testing • Central Limit Theorem	Distinguish between a population parameter and a sample data statistic.
	Identify types of test data for normality testing.
	Define the central limit theorem and describe its significance in the application of statistics.
	Describe and apply concepts
4.4: Use failure mode and effects analysis.	Define and describe failure mode and effects analysis (FMEA).
	Describe the purpose and use of scale criteria and calculate the risk priority number (RPN).
4.5: Calculate process performance.	Calculate process performance metrics such as: • defects per unit (DPU), • rolled throughput yield (RTY), • cost of poor quality (COPQ), • defects per million opportunities (DPMO) • sigma levels, and • process capability indices • .
	Describe the process used to track process performance measures to drive project decisions.
	Define and describe various CTx requirements, such as: • critical to quality (CTQ), • cost (CTC), • process (CTP), • safety (CTS), • delivery (CTD), etc. and the importance of aligning projects with those requirements.

Competency 4.2

Apply DMAIC for Projects - Measure

Performance Criteria	Learning Expected
4.6: Collect and summarize data using: • Data types • Data collection methods • Data assurance, accuracy and integrity techniques • Descriptive statistics • Graphical methods • Probability distributions	Identify and classify continuous (variables) and discrete (attributes) data.
	Describe and define nominal, ordinal, interval, and ratio measurement scales.
	Apply methods for collecting data such as check sheets, coded data, etc.
	Apply techniques such as random sampling, stratified sampling, sample homogeneity, etc.
	Compute, and interpret measures of dispersion and central tendency.
	Construct and interpret frequency distributions and cumulative frequency distributions.
	Depict relationships by constructing, applying and interpreting diagrams and charts such as: • box-and-whisker plots • scatter diagrams • Pareto charts etc.
	Depict distributions by constructing, applying and interpreting diagrams such as histograms, normal probability plots, etc.
	Describe and interpret normal distributions.
	Use data analysis software to obtain the results of the above statistics.
4.7: Implement a measurement systems analysis tool.	Conduct measurement system analysis for attribute data.

Competency 5.

Apply DMAIC for Projects - Analyze

Performance Criteria	*Learning Expected*
5.1: Identify potential causes	Apply tools such as root cause analysis, cause and effect, 5Whys, C and E matrix, value techniques, and Pareto to identify potential causes.
5.2: Use exploratory analysis to study statistical significance.	Analyze the correlation coefficient and determine its statistical significance (p-value).
	Explain the difference between correlation and causation. Interpret the linear regression equation and determine its statistical significance (p-value), histograms and box and whisker diagrams.
	Use regression models for estimation and prediction.
5.3: Undertake hypothesis testing.	Explain and use the following tools: • Basics • Tests for means, variances, and proportions • Paired-comparison tests • Single-factor analysis of variance (ANOVA) • Chi square to define and distinguish between statistical and practical significance and apply tests for significance level, type I and type II errors.
	Determine appropriate sample size for various test.
5.4: Analyze Tollgate review	Present findings of the analyze stages in a concise manner.

Competency 6.

Apply DMAIC for Projects - Improve

Performance Criteria	*Learning Expected*
6.1: Generate potential solutions that address root causes.	Define and use tools such as brainstorming, creative thinking techniques to generate solutions to root causes.
6.2: Pilot root cause solutions.	Apply measure tools to pilot and analyze against hypothesis.
6.3: Apply lean six sigma tools.	Explain and apply tools such as 5S,Poka Yoke, Visual controls. Explain the relevance and need for DOE and the concepts behind it.
6.4: Improve Tollgate review	Present findings of the Improve stages in a concise manner.
6.1: Generate potential solutions that address root causes.	Define and use tools such as brainstorming, creative thinking techniques to generate solutions to root causes.
6.2: Pilot root cause solutions.	Apply measure tools to pilot and analyze against hypothesis.
6.3: Apply lean six sigma tools.	Explain and apply tools such as 5S,Poka Yoke, Visual controls. Explain the relevance and need for DOE and the concepts behind it.

Competency 7.

Apply DMAIC for Projects - Control

Performance Criteria	*Learning Expected*
7.1: Define and utilize Statistical Process Control (SPC): • Objectives and benefits • Rational grouping • Control charts • Analysis of control charts	Describe the objectives and benefits of SPC, including controlling process performance, identifying special and common causes.
	Define and describe how rational sub-grouping is used.
	Interpret control charts and distinguish between common and special causes using rules for determining statistical control.
7.2: Develop a control plan and monitoring systems.	Describe how to develop a control plan to document and hold the gains, and how to implement controls and monitoring systems such as poka yoke, visual controls, SOP's and training needs analysis.
7.3: Apply project closure techniques.	Describe the objectives achieved and apply the lessons learned to identify additional opportunities.
	Present findings in a clear, concise manner.
7.4: Financial Review/Validation	Describe the process of Savings/Improvement validation by an independent entity (Financial Analyst)

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