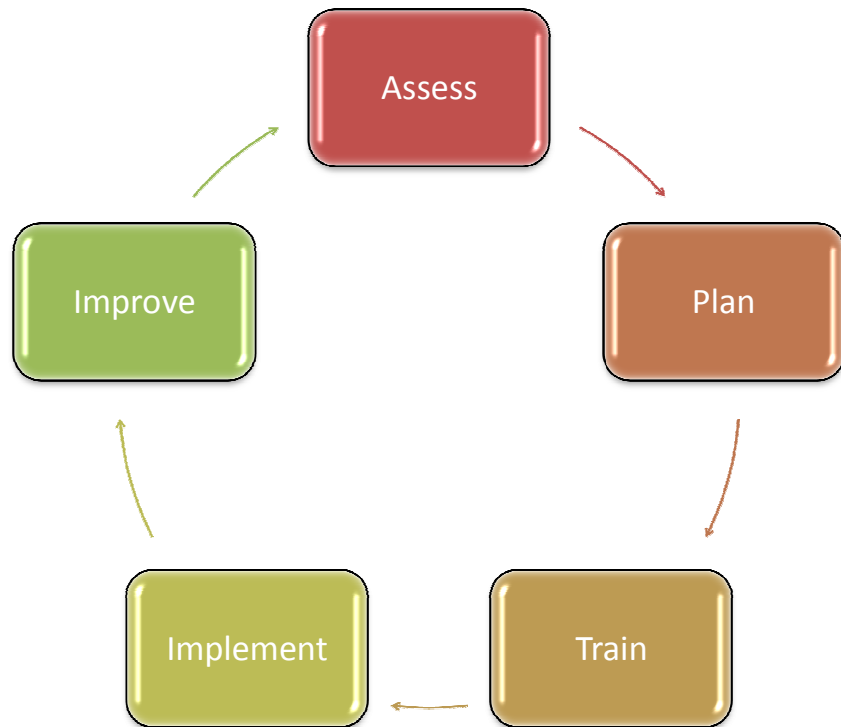


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Lean Six Sigma **Black Belt** Training and Certification(8 day workshop)



From

Confluence Center for Sustainable Development and Business Excellence

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I. Service Delivery Methodology:

1.1 Requirements

- The candidate(s) should have a minimum of 4 years of work experience.
- Posses knowledge of basic statistical tools
- Should be a self motivator and team builder
- Should be able to lead lean six sigma projects
- Candidate must carry his/her own laptop during the training period

1.2 Course Design:

The Lean Six Sigma Black Belt Training and Certification program has been specially designed by us to suit to working people.

The whole workshop spans for 8 days spread across 4 weekend sessions (Saturdays and Sundays) as given below

Four sessions will be conducted in ONE month time covering following topics.

1. INTRODUCTION
2. DEFINE PHASE
3. MEASURE PHASE
4. MEASURE AND ANALYZE PHASE
5. ANALYZE PHASE
6. IMPROVE PHASE
7. CONTROL PHASE
8. IMPLEMENTATION GUIDANCE AND EXAMINATION

1.3 Course Content:

Day 1 – Introduction

- ❑ Six Sigma Organization Structure
- ❑ Six Sigma Roles and Competencies Required
- ❑ Champion, MBB, BB, GB
- ❑ Benefits of the Course
- ❑ About the Course Material Structure
- ❑ History of Quality Evolution
- ❑ Quality Concepts
- ❑ Models of Continuous Improvement
- ❑ Definition of Six Sigma
- ❑ History of Six Sigma
- ❑ Six Sigma Philosophy
- ❑ Goals and Benefits of Six Sigma
- ❑ APT2I Model
- ❑ DMAIC Methodology
- ❑ Types of Benchmarking
- ❑ Benchmarking Process
- ❑ Benefits of Benchmarking
- ❑ Team Formation
- ❑ Team Facilitation
- ❑ Team Dynamics
- ❑ Time Management for Teams

Day 2 – Define Phase

- ❑ Voice of the customer
- ❑ Customer identification
- ❑ Customer feedback
- ❑ Customer requirements
- ❑ Project charter
- ❑ Problem statement, Project scope, Project Goals, Project Performance Measures (Project CTQs)
- ❑ Project tracking
- ❑ 5 S
- ❑ Value Stream Mapping
- ❑ Cross – Functional Training
- ❑ Visual Management
- ❑ Spaghetti Chart
- ❑ Kaizen (means improvements, happens at process level)

- ❑ Kaikaku (means transformation, happens at system level)
- ❑ Standardized work
- ❑ Poka-Yoke (means mistake proofing)

Day 3 – Measure Phase

- ❑ Process characteristics
- ❑ SIPOC Process Mapping - Input and output variables
- ❑ Process flow metrics
- ❑ Process analysis tools
- ❑ Data collection
- ❑ Types of data
- ❑ Measurement scales
- ❑ Define and apply nominal, ordinal, interval, and ratio measurement scales.
- ❑ Sampling methods
- ❑ Collecting data
- ❑ Measurement systems
- ❑ Measurement methods
- ❑ Measurement systems analysis
- ❑ Measurement systems in the enterprise
- ❑ Basic statistics
- ❑ Basic terms
- ❑ Central limit theorem
- ❑ Descriptive statistics
- ❑ Graphical methods
- ❑ Interpretation of statistical analysis results or statistical conclusions

Day 4 – Measure and Analyze Phase

- ❑ Probability
- ❑ Basic concepts
- ❑ Commonly used distributions
- ❑ Normal, Poisson, binomial, chi-square, Student's t, and F distributions.
- ❑ Other distributions
- ❑ Hypergeometric, bivariate, exponential, lognormal, and Weibull.
- ❑ Process capability
- ❑ Process capability indices
- ❑ Process performance indices
- ❑ Short-term and long-term capability
- ❑ Process capability for non-normal data
- ❑ Process capability for attributes data

- ❑ Measuring and modeling relationships between Variables
- ❑ Correlation
- ❑ Regression
- ❑ Multivariate tools
- ❑ Multivari studies
- ❑ Attributes data analysis
- ❑ Hypothesis testing
- ❑ Terminology
- ❑ Statistical vs. practical significance
- ❑ Sample size
- ❑ Point and interval estimates
- ❑ Tests for means, variances, and proportions
- ❑ Analysis of variance (ANOVA)
- ❑ Goodness-of-fit (chi square) tests
- ❑ Contingency tables
- ❑ Nonparametric tests

Day 5 – Analyze Phase

- ❑ Failure mode and effects analysis (FMEA)
- ❑ Design FMEA (DFMEA) and process FMEA (PFMEA), and interpret results from each.
- ❑ Additional analysis methods
- ❑ Gap analysis
- ❑ Root cause analysis
- ❑ Waste analysis
- ❑ Identify and interpret the 7 wastes

Day 6 – Improve Phase

- ❑ Design of experiments (DOE)
- ❑ Terminology Used
- ❑ Design principles
- ❑ Planning experiments
- ❑ One-factor experiments
- ❑ Two-level fractional factorial experiments
- ❑ Full factorial experiments
- ❑ Waste elimination
- ❑ Pull systems, kanban, 5S, standard work, poka-yoke, etc.
- ❑ Cycle-time reduction
- ❑ Use various tools and techniques for reducing
- ❑ cycle time, including continuous flow, single minute exchange of die (SMED), etc.
- ❑ Kaizen
- ❑ Concept, Implementation and Benefits

- ❑ Theory of constraints (TOC)
- ❑ Concept and its use.
- ❑ Implementation
- ❑ Develop plans for implementing the improved process (i.e., conduct pilot tests, simulations, etc.), and evaluate results to select the optimum solution.
- ❑ Risk analysis and mitigation
- ❑ Feasibility studies, SWOT analysis, PEST analysis, Risk Identification, Risk Mitigation, Risk Monitoring

Day 7 – Control Phase

- ❑ Statistical process control (SPC)
- ❑ Objectives
- ❑ Selection of variables
- ❑ Rational subgrouping
- ❑ Control chart selection
- ❑ Control chart analysis
- ❑ Maintain controls
- ❑ Measurement system re-analysis
- ❑ Control plan
- ❑ Sustain improvements
- ❑ Lessons learned
- ❑ Training plan deployment
- ❑ Documentation
- ❑ Ongoing evaluation

Day 8 – Implementation Guidance and Examination

- ❑ APT2I Model
- ❑ (Our proprietary Framework for deploying Six Sigma as an Organization wide Initiative)
- ❑ Assessment Phase
- ❑ Plan Phase
- ❑ Training Phase
- ❑ Implement Phase

Examination - Participants are required to appear for a four-hour open book Lean Six Sigma Black Belt Certification Examination at the end of training on the eighth day. Each candidate who successfully completes the certification exam will be awarded as “Certified Lean Six Sigma Black Belt”.

Duration of each day of workshop shall be for a period of around 8 Hrs (including Lunch and Tea Breaks), however the participants may need to be ready to do few brainstorming and few exercises late evenings.

1.4 Training Methodology:

1. Training shall include group exercises and brain storming sessions to enable them to work in groups and learn from interaction in groups.
2. Project training using Case Studies.
3. At the end of each exercise one of the group members shall take lead and make presentations on the group conclusions.
4. Study materials and work book shall be provided by the consultants to all participants.
5. Evaluation of participants shall be carried out on the following basis for awarding them as **Certified Lean Six Sigma Black Belt**.
 - Pass the exam conducted at the end of the course by achieving a minimum of 70% marks.
 - Meet the other requirements such as day end exercises and personal attributes such as communication skills, involvement during the training and attendance / punctuality.

II. Course Fee (Your Investment) Details:

Please call +91 9000800226 to know the course fee, for early bird and group discounts. Course fee has to be paid at the time of registration for the course.

III. Our Clients:

Reliance Infra Power Projects| HSBC| ADP| CA| HP| Genpact| RBS | BACI |HDFC |Capgemini| SKS Microfinance | Verizon| Convergys| Karvy| EMRI | Focus Soft | Assam Carbon | Aditya Constructions | Coca Cola| Dr. Reddy's| DMRL| BHEL|Tecumseh| Hetero Drugs | GoldStone Technologies | DQ Entertainment |Rane Brakelinings| ITC Ltd | Rain Cements | Sandvik Asia | AGI Glaspac and many others.

IV. Profile of Consultants

VENKATESH YERRAMALLA

CEO & Principal Consultant

He is a graduate in mechanical engineering with specialization in production from Osmania University and **Certified Manager of Quality and Organizational Excellence** from American Society for Quality, Six Sigma Master Black Belt, He also possesses a professional certification in Basics of Supply Chain Management from APICS, USA. He is a certified Lead Assessor from British Standards Institute Training Services, UK for ISO 9001 Quality Management Systems and he was also a Trained Facilitator for “Effective Personal Productivity” training program of M/s. Leadership Management International, USA. He possesses diverse experience in various functions like management, marketing, production, quality assurance and projects across various industry segments like software development, IT enabled services, ISP, engineering, pharmaceuticals, LPG, automotive components, banking, share registry, continuous process industry like glass, agri products, food and beverages, etc.

He has over 21 years of industry experience with M/s. Shriram Fuel Injection Industries, M/s. Renewable Energy Systems Limited, M/s. Aptech Consulting and M/s. Confluence. During his service at Aptech Consulting, he was handling the Hyderabad Operations of the company and has successfully completed many projects for establishing quality and environmental management systems and one BPR project. He was also a presales consultant for BaaN ERP for which Aptech Consulting was an implementation partner.

During his service at Aptech Consulting, some of the ISO 9000 projects he handled include South Central Railways, BPCL LPG Bottling Plant, Dr. Reddy’s Laboratories, Vorin Laboratories, Asian Coffee Ltd, Hindustan Sanitaryware & Industries Ltd, Bank of Madura, SMS Pharmaceuticals, Synthokem Labs Pvt. Ltd, Sagar Soft (India) Limited, Kirby Building Systems, etc. During his service in M/s. Aptech Consulting, he was awarded “Paradigm Pioneer” award for best execution of a project in terms of benefits to the client. With Confluence he has several projects on business excellence, Lean Six Sigma Deployment and Management System Implementation in some of the prestigious organizations such as ITC Limited (3 Divisions viz., ILTD, PSPD and ABD), Reliance Infra, Coca Cola, DMRL, Sandvik Asia, EMRI, BHEL, Hetero Drugs, Rane, Rain Cements, AGI Glaspac, etc.

PANKAJ SINGH

Principal Consultant

Pankaj Singh, Six Sigma Master Black Belt is founder & thought leader for Transium Consulting, a commercial initiative to foster in human capital & organizations, a process excellence DNA.

In a career spanning nearly two decades Pankaj has been instrumental in conceptualizing & deploying many business excellence programs. He has delivered on several dollars of business productivity enhancements through **six sigma & lean**.

As a six sigma professional with experience in ITES & manufacturing related domains, he possesses diverse experience of deploying Six Sigma initiative across industry domains. His career experience includes positions with Oceans Connect, WNS Global, Aptech Limited & the Shriram group.

With extensive exposure to several industry sectors and wide business acumen, Pankaj has been instrumental in managing cross border acquisitions, scaling business operations and leading a variety of operational initiatives to enhance efficiencies .

Pankaj has championed over 19 ISO 9001 & 27001 certifications across Banking, Automobile, Pharmaceutical & ITES sectors.

Pankaj holds a Bachelor of Technology in Mechanical Engineering from Jawaharlal Nehru Technological University Hyderabad India and has completed several management courses.