

COURSE MODULES	SUB-MODULES
Introduction	<ul style="list-style-type: none"><li>▪ (Lean) Six Sigma background/definition</li><li>▪ Lean Six Sigma Goals</li><li>▪ Concept of Six Sigma defects<ul style="list-style-type: none"><li>○ Critical-to-quality characteristics</li><li>○ Defects</li><li>○ Defect opportunities</li></ul></li><li>▪ Efficiency optimization</li><li>▪ Industry defect <i>status quo</i></li><li>▪ Process capability</li><li>▪ Customer-centric approach</li><li>▪ Actual ROIs for companies who use Six Sigma</li><li>▪ Improvement process</li><li>▪ Improvement strategies</li></ul>
Voice of the Customer	<ul style="list-style-type: none"><li>▪ Process life cycle</li><li>▪ Definition of VOC</li><li>▪ Objectives</li><li>▪ Translation of VOCs &gt; customer needs &gt; customer requirements</li><li>▪ Listening to VOC<ul style="list-style-type: none"><li>○ VOC assessment practices</li><li>○ Identification of VOC</li></ul></li><li>▪ VOC examples</li><li>▪ VOC 'Noise-to-meaning'</li><li>▪ Customer communication</li><li>▪ Business opportunity worksheet</li><li>▪ Customer interviewing</li><li>▪ Customer data collection<ul style="list-style-type: none"><li>○ Customer surveying</li><li>○ Scorecards</li></ul></li><li>▪ Analysing customer needs</li><li>▪ Analysis tools</li></ul>

## Define

- Affinity diagrams
- Kano models
- Translating needs into requirements
- Critical-to-Quality (CTQ)
  - Definition/Identification
  - CTQ Trees
- Quality Function Deployment (QFD)
- Translating customer needs into metrics
- Linking VOC and process performance
- VOC synopsis
- Phase aims/outputs breakdown
- Identifying business problem
- Project selection considerations
- Maximising financial benefits
  - What to look for
- Interviewing managers
- Operations and process reviews
- Visualizing project selection
- Aligning projects to business strategy and priorities
- Project charter
  - Components
  - Basic template design
  - Strategy and business case
  - Examples
- The Problem Statement
  - S.M.A.R.T.
  - Examples
- Objectives - rationale
- Objectives – attributes
- Deliverables definition
- Project scope
- Cost/benefit assumptions
- Constraints, risks, budgets, and costs
- Constraints – stakeholder analysis
- Stakeholder analysis – influencing strategy
- Resources analysis
- Assigning roles and responsibilities

## Qualitative Measure

- Project Sponsorship/Championing
- Tollgate – phase review
- Project planning
- Definition of project
- Project initiation
- Factors which influence project failure
- Mission analysis
- Project management
- Milestones assessment
- Milestone plan
- Gantt charts
- Checkpoints – GRPI tool
  - Goals
  - Roles
  - Processes
  - Interpersonal
- Synopsis
- Phase aims/outputs
- Understanding processes
  - Process definition
  - End-to-end view
  - Perception and reality of processes
  - Characteristics of poor processes
  - Hand-offs
  - Non-value-added activities and rework
- Visualising processes
  - Requirements
  - Tools and techniques
  - SIPOC model
  - Process mapping
  - Deployment charts
  - Moments of Truth
  - Workflow diagrams and analysis
  - Concentration diagrams
- Lean and value analysis
  - Lean concept
  - Value analysis
  - Lean thinking – waste

**Quantitative Measure**

- 5S
- Quality at Source
- Visual management
- Critical path analysis
- Cause and effect analysis
  - Route cause analysis
  - Fishbone diagrams - steps
  - Fishbone diagrams – benefits
  - The 5 Why's
- Synopsis
- Phase aims/outputs
- Introduction to measurement
  - Where to measure
  - Inputs, process, and output measures
  - Data types
  - Measure definition
  - Effectiveness and efficiency
  - Common process measures
- Specification limits
  - Input, process, and output measures
  - CTQ
  - Defining
  - Performance standards
- Data collection
  - Planning
  - Steps
    - Clarify objectives
    - Define measurements
    - Measurement system analysis
    - Sampling methods
- Cleaning data
  - Rationale
  - Example
  - Transforming data to make it meaningful

**Analyse**

- Phase aims/outputs

**Improvement  
Solution  
Development**

- Basic statistics and graphing
  - Display distribution of data
  - Interpreting histograms
  - Time-to-close incidents
  - Display data over time
  - Causes of variation
  - Common cause vs. Special cause variation
  - Run Charts
  - Interpreting Run Charts
  - Define Key Statistical Indicators
  - Central tendency
  - Application Service Delivery
  - Process Mean and Standard Deviation
  - Normal curve and probability areas
  - Six Sigma concept
  - Statistical indicators of distribution
  - Percentile charts / box plots
  - MINITAB
- Baselining process capability
  - DPMO definition
  - Calculating DPMO
  - Process Sigma calculation
- Verifying root causes
  - Graphical tools
  - Pareto chart
  - Data Stratification - factors
  - Standard incident cycle time
  - The Bottom Line
  - Interpreting and using scatter plots
- Synopsis
- Phase aims/outputs
- Solution development
  - Stop the Bleeding
  - Move to operating excellence
  - Generating potential solutions
    - Creativity techniques
    - Brainstorming

## Improvement Implementation

- Negative brainstorming
- Brain writing
- Mind storming
- Assumption busting
- Evaluating alternative solutions
  - Affinity diagrams
  - Screening
  - Effort/benefit matrix
  - Risk assessment
  - Business appreciation
  - Criteria-based decision matrix
  - Pugh matrix
  - Cost benefit analysis
  - Process modelling
- Assess and Pilot Solution(s)
  - “Should Be” mapping
  - Failure Modes and Effects Analysis (FMEA) tool
- Solution selection
  - Prioritise: N/3
  - Grouping
  - Screening remainders against
  - Effort/benefit matrix
  - Risk assessment
- Synopsis
- Journey of process improvement
- Implementation planning
  - Implementation plan
  - FMEA
  - Error proofing
  - Change management
  - Solution components
  - Communication planning
- Piloting solutions
  - Considerations
  - Elements of pilots
  - Benefits of piloting

## Control

- Preparation of pilot
- Piloting new processes
- Reviewing the pilot
- Completing the pilot
- Full scale implementation
  - Confirm ownership for Improvement
  - Visualization
  - Standard Operating Procedures
- Phase aims/outputs
- Reviewing the implementation
  - Control the gains
- Establishing process measures
  - Ongoing VOC
  - Managing customer expectations
  - Scorecards
  - Service Level Agreements (SLAs)
  - Management information and data availability
  - Process measures and dashboards
  - Typical measures in applications delivery services
  - Ongoing audit and controls
  - Statistical process control (SPC) – application
  - Interpreting control charts
  - Response plans
- Handing over to the business
  - Handover document
  - Standard Operating Procedures
  - Process management chart
  - Process documentation for handover
  - Challenges for process owner
- Closing the project
  - Elements of closure
  - Feedback meetings
  - Lessons learned
  - Review meetings
  - Closure report

## Conclusion

- Change management
- 6 key actions to execute for successful change
- Assessment
- Tools for developing vision statement
- Making the vision actionable
- Communicating the vision
- Pitfalls
- Aligning organisation
  - Six aspects
    - Staffing
    - Development
    - Measures
    - Rewards
    - Communication
    - Organisational design/job structure
- Organisation analysis
- Project impact on aligning organisation
- Assess control / influence on key organisation areas
- Assess your current organisation
- Planning for integration
  - Defining performance
  - Measuring performance
  - Rewarding performance
- Sponsoring change
- Project focus assessment
- Tools for Change Management
- Establishing change