

# MASTER LEAN SIX SIGMA

GREEN BELT  
PROGRAM

BONFIGLIOLI CONSULTING  
Conferenze Worldwide



## INTRODUCTION TO SIX SIGMA

- ✓ QM introduction: background - TQM - Lean - Six Sigma
- ✓ Six Sigma introduction: DMAIC DFSS (DMADV)
- ✓ Six Sigma introduction: roadmaps, roles and key players

## DEFINE

- ✓ From the Voice of the Customer to the project
  - ✓ Project Charter: the structure - the ring
  - ✓ Introduction to cost and cost metrics
  - ✓ CTQ: CTQB, CTQ, CTT ...
  - ✓ Six Sigma metrics: from % to PPM and DPMO
  - ✓ Processes mapping: VSM, SIPOC and technological diagram
  - ✓ Stratification and clustering: a method to deal with data
  - ✓ Pareto analysis and Juran approach definition and implementation to problem setting
- Presentation and discussion of a real case study of Project Charter implementation in a paper mill organization \*

## MEASURE

- ✓ How to plan an effective data gathering: Data Collection Plan
  - ✓ Analysing data and their features to monitor and analyse phenomena on a regular base
  - ✓ Statistical basics in industrial use
  - ✓ Statistical dispersion and central tendency measurement in probability distributions
  - ✓ Effective data presentation
  - ✓ Normal distribution and statistical basics
  - ✓ Process capability
  - ✓ Process and performances KPIs
  - ✓ Confidence interval
  - ✓ Sampling and sample sizing
  - ✓ Measurement System Analysis: the tolerancing problem in measurement processes
  - ✓ Gauge R&R and the importance of reliability for measures in KPIs dashboards
- Presentation and discussion of a real case study about Capability Problem \*

## ANALYSE

- ✓ Quali-quantitative analysis
  - ✓ Analysis tools: cause-effects diagram (Ishikawa)
  - ✓ Root causes: 5Ws, 4Ws+H
  - ✓ Qualitative analysis tools: Contingency Table (also referred to as cross tabulation or crosstab)
  - ✓ Qualitative analysis tools: Hypothesis Test
  - ✓ Correlations regressions basics
- Presentation and discussion of a real case study about problem setting and analysis tools and techniques DoE\*

## IMPROVE

- ✓ How to set solutions for improvement: DoE basics
  - ✓ DoE implementation to experimental planning for industrial use
  - ✓ Basics on developing full-factorial DoE and fractional-factorial DoE
  - ✓ Other options to generate solutions: convergent and divergent thinking introduction
  - ✓ Solutions ranking and selection
- Presentation and discussion of a real case study about DoE implementation in testing \*

## CONTROL

- ✓ Control phase: basics and introductive thinking on how to effectively control improved processes
  - ✓ Control Charts basics
  - ✓ Control and reactions plans
  - ✓ Statistical Process Control basics
  - ✓ Control Charts: introduction to variable data and attributes and their features
  - ✓ How to develop a control chart for continuous data
- Presentation and discussion of a real case study about : Control Charts and Reaction Plan \*

## LEAN THINKING

- ✓ 2 training days at our Lean Factory School® to understand Lean principles and techniques with a hands-on approach
- ✓ WALKING TOURS IN REAL MANUFACTURING PLANS
- ✓ TUTORING TO FINALIZE PROJECT WORK
- ✓ LEAN GREEN BELT CERTIFICATION

\* Case Studies are introduced and discussed during the front-lessons