Six sigma
black belt training

PMI
Process Management International

Transforming goals into results

How long does it take?
4 modules of 5 days made up of 2 x 5 days green belt & 2 x 5 days black belt conversion.

What are the benefits?
Delegates will leave equipped to promote and practise advanced six sigma tools and techniques, having successfully completed a significant improvement project.

Who should attend?
Highly motivated individuals working in improvement.

Those who are confident in working with complex numbers and statistics.

How can I do it?
As an in-house programme in your company/ organisation.

As part of our public training programme in the Midlands or London.

Overview

PMI six sigma black belt training generates a powerful new resource for your organisation. An intensive training process of four weeks over four months enables delegates to lead or facilitate six sigma projects and become accredited as black belts. The programme builds upon all of our experience to combine the best of the technical toolset with sympathetic and robust learning design.

Taking part in PMI black belt training ensures delegates will:

- **become knowledgeable about the six sigma concepts and methods, and how to apply them**
- **work with their champion/sponsor to overcome barriers they encounter**
- **lead teams to achieve results in an ever shorter time frame**
- **present their project status to executives in a concise but complete manner**

Six sigma projects

Improvement projects are the engines of six sigma programmes. They should be selected by the steering team as a result of analysis of the whole system, in the context of the strategic goals and current vital issues. Their successful implementation is a critical part of achieving the business case. Champions are identified for each six sigma project and they lead the selection of the project team and the black belt. The champion oversees the implementation of the six sigma project under its leader, helping the leader to overcome organisational barriers and keeping open the communication with the steering team and other projects.

"It has helped us to see processes as a way of understanding how problems cascade through operations."

"The trainers and support from PMI were excellent and the courses extremely well structured"

Content

- introduction to six sigma
- the need for organisational cultural change and the process to make it happen
- customer focus and affect on organisations
- the roles of black belts and other key players in the six sigma programme
- process improvement learning cycles and other models to support improvement projects (PDSA, DMAIC)
- six sigma metrics include Defects Per Million Opportunities
- system view of the business
- linking a learning philosophy to process improvement
- the role of chartering and contracting in project selection
- requirement of leadership in the change process and how to intervene effectively
- teamwork components and clarify team roles and responsibilities including that of facilitation
- additional control charting techniques:
  - p, np, c, u
  - charts for processes with trends
- further measurement systems understanding
- advanced statistical measures such as chi-squared, T-tests, ANOVA , regression analysis and associated tools to investigate and verify causes of variation
- solution generation tools including Triz
- introduction to design of experiments, a methodology for the detailed investigation of process variation:
  - DoE – fractional factorial
  - DoE – full factorial
  - DoE – optimising solutions
- ensuring project engagement and avoidance of pitfalls of change challenges
- executive and champion reviews
- SIPOC and flowcharting
- cycle time measurement and reduction
- tools for displaying variation within a process
- difference between stable and unstable processes and appropriate action
- shape, centre and spread of variation and the effects of tampering
- control charts for a wide range of situations and data types
- chart types include:
  - Individuals and Moving Range (XmR)
  - Deviation from Aim
  - X-bar & R
  - Mean and Range (X-bar and R)
  - 3D
  - p, np, c, u
- charts for Processes with trends
- process performance and capability
- effects of non-conformance using the Taguchi loss function and the importance of setting the process aim
- strategies to deal with short run SPC
- introduction to Minitab

Programme duration

The black belt programme consists of 4 x 5 days in total. In addition there is a written examination and review day which delegates must take part in.
A documented improvement project must be submitted and accepted by our examiners in order to be accredited.

The content of each week is flexible depending on the participants but all topics are covered. Participants need to provide a laptop computer and Minitab software (available through PMI).

Contact us for more information on our full range of six sigma programmes or to book your place:
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CQI Chartered Quality Institute

PMI Process Management International