

Six Sigma Black Belt


The Six Sigma approach and methodology are a management strategy for the improvement of process performance while improving productivity and quality to satisfy customer demand and reduce costs. Six Sigma is data driven and employs various mathematical tools and statistical analyses. A problem-solving process known as define, measure, analyze, improve, and control (DMAIC) is an integral part of Six Sigma. Six Sigma borrows martial arts terminology to define a career path as well as develop professionals. A Green Belt is the Six Sigma entry level; a Black Belt has cross-functional capability including leading project teams and providing Six Sigma training and mentoring to Green Belts. At the top of the ladder are Master Black Belts who act as coaches and mentors at both operational and management levels.

The APO and China Productivity Center organized a Six Sigma Black Belt training course as a follow-up to the 2009 e-learning course and 2010 training course on Six Sigma Green Belt, 5–9 December 2011, in Taipei. The course targeted previous participants in those APO Six Sigma projects to create a cadre to train others for multiplier effects. Two international and one local experts were assigned, and 19 individuals from 12 member countries attended.

Because the DMAIC approach takes a practical problem, translates it into a statistical problem, finds a statistical solution, and finally evolves a practical solution, the training course followed the DMAIC steps to demonstrate different Black Belt tools and techniques. In addition, during the “improve” phase,

the TRIZ concept of inventive problem solving was introduced. TRIZ has found numerous adherents, especially in engineering fields, recently because it fits neatly into the Six Sigma methodology and encourages brainstorming and in-

novation. Other topics covered were failure mode and effect analysis, statistical process control, the theory of design of experiment, and measurement system analysis. Overall, the course concentrated on practical aspects, which were also demonstrated during a visit to Ford Lio Ho Motor Co., Ltd., which utilized Six Sigma to improve its competitiveness in the automotive components sector.

An examination was given on the final day to provide participants with feedback on their progress. Most agreed with Secretariat Industry Department Program Officer Kritchai Anakamane, who found that, “Although Six Sigma sounds difficult, the math is simply a tool to support a problem-solving process. In actuality, it is not as complicated as I originally thought and can be applied to broad work-related areas.” 



Analyzing repeatability and reproducibility of measurements.