ABSTRACT

A rapidly increasing competition among motorcycle manufacturers in Indonesia has left PT. Astra Honda Motor, the current market leader, with not too many choices except to keep the customers happy by continuously maintaining high quality level. Every defect occurs in the manufacturing process poses a threat to the company. Thus, a continuous improvement has become a must for PT. Astra Honda Motor. To achieve the most gain, the company needs to find a set of strong yet practical framework and tools. The answer to this quest lays in the Shainin/Bhote Design of Experiments that is being embedded into the Six Sigma framework and its tools.

As a study case, a dominant defect problem that occurs in the assembling process of Karisma 125D, one of PT. Astra Honda Motor high end product, is chosen to be examined. The particular defect is the unaligned rear fender defect that takes up about 40% of all occurring defects in the assembling process of Karisma 125D, and it has been around for more than two years. There had never been any action taken to tackle the problem, because the teams assigned to tackle this problem have never come to an agreement about the causal factor of the defect!

Six Sigma framework with its DMAIC cycle will guide the research through a series of structured steps already proven strong to tackle quality problems. The Shainin/Bhote Design of Experiments will provide weaponries for the company to corner the exact causal factor(s) of the problem, generating theories, and designing control processes to maintain the improvement. The expected final results of this research are to generate the optimal solution for the defect problem, to provide control method and tools to maintain the improvement, and to act as a pilot project for the company to implement the new strong tools of Shainin/Bhote Design of Experiments, and of Six Sigma Framework.

Keywords: six sigma, shainin/bhote, design of experiments, doe, quality improvement.