P-Glossary

Taguchi method

The Taguchi method of product design, pioneered by Dr. Genichi Taguchi is an experimental approximation that shows how the statistical design of experiments (DOE) can help design and manufacture high-quality products and reduce product development time and cost. The method is also called "robust design," Dr. Taguchi's approach is primarily focused on eliminating the causes of poor quality and making product performance insensitive (less variable and more robust) in the face of the variation of expected problems. DOE is a powerful statistical technique for determining the optimal factor settings of a process performance, thereby achieving reduced process variability and improved manufacturability of products. Dr. Taguchi refers to DOE as "off-line quality control" because it is a method of ensuring good performance in the design stage of products or processes, while other sets of experimental designs are called "on-line quality control" because they are used while the process is operating. In a nutshell, it is a technique for designing and performing experiments to investigate processes where the output depends on many factors (variables; inputs) with the fewest trials and errors and without uneconomical operations of the processes using all possible combinations of those variables. The method systemically chooses optimal combinations of the variables desired.