

21C - Visual Six Sigma: Making Data Analysis Lean

Presenter

Philip J. Ramsey, Ph.D. Professor, University of New Hampshire - pjrstats@aol.com

Session Summary

Visual Six Sigma (VSS) uses interactive and dynamic data visualization to more quickly transform data into the information that is necessary to make sound, data-driven business decisions. In this context, VSS represents the next generation in Six Sigma methodology. It takes advantage of powerful, modern software and hardware that was not available when Six Sigma was originally developed in the late 1980's and early 1990's. VSS consists of three main stages:

- 1) Use dynamic visualization to uncover important sources of variation in the data.
- 2) Use exploratory data analysis to uncover key sources of variation and statistical models of process performance.
- 3) Use confirmatory statistical methods (e.g., design of experiments and hypothesis testing) only when the conclusions of exploratory data analysis are not obvious.

In most instances with VSS, as compared to traditional, continuous improvement strategies such as the Six Sigma DMAIC process, you can, significantly reduce the time and effort required to achieve substantial business and quality improvement. In addition, you can use VSS informally to explore data and to foster improvements without the infrastructure of a formal Six Sigma program.

The session uses case studies from healthcare, engineering, and manufacturing to illustrate the application and power of VSS.

About the Presenter – Phillip J. Ramsey

Philip J. Ramsey, Professor, University of New Hampshire, is an industrial statistician and quality engineer with over twenty-five years of experience in applying statistical methods to products, processes, and R&D programs. His statistical methods apply to diverse industries and disciplines, including: aerospace, chemicals, metals, microelectronics, automotive, apparel, construction, nondestructive testing, and general manufacturing. Dr. Ramsey has held the following relevant industrial positions: Senior Engineer for Materials and Processes Development, McDonnell Douglas, St. Louis, MO; Staff Scientist/Statistician, Alcoa Technical Center, Pittsburgh, PA; and Corporate Statistician/Senior Engineer, Rohm & Haas Electronic Materials, Marlboro, MA.

Dr. Ramsey also has extensive experience with the design and delivery of industrial training courses in statistical process control, design of experiments, and data mining. Dr. Ramsey operates the North Haven Group consulting firm which specializes in all phases and types of Lean Six Sigma and Design for Six Sigma training, certification, and consulting. In addition, Dr. Ramsey is a faculty member in the Department of Mathematics and Statistics at the University of New Hampshire in Durham, NH.