

Six Sigma Measurements and the Implementation TQM, BPI, and the Philosophy of Deming *

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An organization is in trouble. It needs to improve now or it will not survive! However, which improvement method is best? There is Total Quality Management (TQM), Business Process Engineering (BPR), Business Process Improvement (BPI), the philosophy of Deming, and other "new" programs. Confusing? -Yes. However, if change is approached wisely, organizations and employees gain much. Unfortunately, if change is not approached wisely, the effort can create more harm than good.

Rather than trying to improve and/or re-engineer all manufacturing, development, business, and/or service processes within an organization, it is best to start by looking at the big picture and work down. *Implementing Six Sigma: Smarter Solutions using Statistical Methods*, Forrest W. Breyfogle III, John Wiley and Sons, New York, NY, 1999 describes a roadmap that helps with this effort. An organization might start by control charting monthly profits for the last several years. A normal probability plot of common cause variability from recent months of this metric will show expected month-to-month variability that could be representative of future results unless something is done different.

After observing the control chart and normal probability plot of month-to-month variability, it might be apparent that change is needed. This type of situation can lead to excellent candidates for Six Sigma projects. A Pareto chart is often helpful to identify opportunities for improvement. Teams working with Pareto charts can brainstorm for improvement opportunities or focus areas for other team concentrations. After viewing the financial information of an organization presented in Pareto chart format, a cross functional team might be formed to focus on reducing the number of manufacturing defects using Six Sigma tools.

This new cross-functional team should then focus on measurements and improvements for this target area. This work might then lead to the reengineering of a process using Design of Experiment (DOE) techniques targeting the reduction of insufficient solder defects (identified as the largest root failure case in a Pareto chart). Improvements in this manufacturing process and other focus areas (e.g., business, service, and development processes) will cause our big picture control chart of the financial metric to then go out of control to the better.

Target areas are added and deleted as necessary through this tops down approach. Organizations find that they reap more benefits in a shorter period of time by focusing on monetary issues that are important to executives. When employees at all levels within an organization participate with process improvement and reengineering changes instituted by executives, organizations find that improvements are more beneficial and long lasting.

Additional information and a roadmap for integrating measurements with process improvement activities can be found within *Implementing Six Sigma: Smarter Solutions using Statistical Methods*, Forrest W. Breyfogle III, John Wiley and Sons, New York, NY, 1999. The wise integration of TQM, BPI, and the philosophy of Deming, with Six Sigma tools is described within our training. Focus during the training is given to building effective implementation procedures that have bottom line results for the application situations described by attendees.

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