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Stop Fighting Fires

By Forrest W. Breyfogle III

Special Cause vs. Common Cause

For stability in any operational process, nonconformance can be traced to one of two types of variability: either special cause (glitches in the process) or common cause.

W. Edwards Deming says that 94% of nonconformance is due to common cause variability. Typical common cause problems include predictable variability in suppliers' raw materials, differences between personnel/machines/departments, time of the day/week, and inefficient/ineffective process steps.

Many businesses react to these two types of variability in the same way. Reacting to common cause variability as though it were special cause can lead to much resource-draining firefighting. There is a better way.

Focusing corrective efforts on common cause non-conformance can improve overall enterprisewide performance significantly. To do so, however, a special project must be set up to consciously improve the process and/or the inputs to it. Common cause problems can be identified and corrected by deploying Lean Six Sigma tools up and down the value chain. This effort also will reduce instances of the blame game and, in turn, build a more cooperative, more responsive workforce that can immediately address any special cause variability problems that crop up.

Some of the newer efforts to make organizational improvements are devoted to deploying the commonly used Six Sigma quality roadmap known as DMAIC (Define-Measure-Analyze-Improve-Control) on an enterprise-wide basis.

Some History

DMAIC was first put to use in manufacturing environments as a project-execution roadmap. Given its broad applicability, it is now also used by services businesses, governments, and nonprofits. DMAIC provides a structural framework for implementing Six Sigma improvement projects, that is, a systematic, data-driven approach to making improvements managed by employee practitioners who may be working full-time on Six Sigma projects.

The operative word here is "projects." Until recent years, DMAIC has been used primarily to make improvements one project at a time. It sometimes provided disappointing results when management would select silo-based projects that sounded beneficial in isolation but often had minimal, if any, benefit to the enterprise as a whole. Little attention was given to using a framework for analyzing the enterprise as a whole to select and coordinate projects that make organization-wide improvements.

A Better Way

Things have changed. Organizational managers have started to use DMAIC on an enterprise-wide basis. The process is used strategically, focusing on efforts that will make the greatest contribution to the bottom line and change the organization's culture. As a result, every employee is given

responsibility for helping the organization enable the 3 Rs of business: Everyone is doing the Right things, doing them Right, and at the Right time.

When DMAIC is applied enterprise-wide in this way it is known as E-DMAIC (E is for Enterprise). To distinguish it from the traditional use of DMAIC, the term becomes known as P-DMAIC (P is for project). The integration of E-DMAIC with P-DMAIC is part of the full-range measurement and improvement system known as Integrated Enterprise Excellence.

The E-DMAIC approach establishes an infrastructure that links high-level enterprisewide process-performance measurements, analyses, improvements, and controls. This leads to the development of specific improvement strategies and projects that are in true alignment with business goals and the bottom line! This is quite different from “passing down” across-the-board goals like “improving on-time shipments” for all operational components.

How to Use E-DMAIC

A summary of the E-DMAIC steps is:

- **D is for Define:** The organization defines its customers and their requirements and describes its resources, systems, and other factors in a value chain format.
- **M is for Measure:** It collects performance metrics on a "big picture" basis. This includes metrics at operational, production, and corporate levels. There are also cascading metrics measurements. For example, a product return rate that was measured at operational levels cascades to the manufacturing facility product return rate. Data is captured in a time-series format, as a motion picture, not as a snapshot. This makes tracking possible in describing trends and uses a metric format at an operational level to predict the future rather than simply chart the past.
- **A is for Analyze:** An organization's enterprise resource planning data is analyzed in totality. The blending of metrics with innovation provides a broad range of benefits: It determines where improvement efforts should focus; helps the organization build bridges across its silos; provides insights to strategy building; enhances the simulation modeling of value stream maps and other tools to identify process and policy constraints that can be overcome; identifies risk assessments that can lead to further improvements; and compiles meaningful customer data.
- **I is for Improve:** IT can be used also to help prioritize improvement and design projects that impact an overall business. Metrics are used to manage analytically/innovatively-determined strategy—not simply to measure progress against goals, but which may be somewhat arbitrarily determined and require a process-improvement plan to meet the goal. Metrics concentrate on processes that contribute most importantly to the bottom line—up and down the value chain.
- **C is for Control:** Improvements are maintained by making the needed changes to the system's structures. Systems are established to ensure long-term compliance and avoidance of process performance degradation.

The Benefits of E-DMAIC

DMAIC allows organizations to:

- Establish a system that will stay in place regardless of management changes
- Ensure predictability, despite changing economic and competitive factors

- Get out of firefighting mode

Bottom line: E-DMAIC maximizes the contributions of all employees. Everyone is helping the organization achieve the 3Rs of business.

Author Bio:

Forrest W. Breyfogle III is the founder and CEO of Smarter Solutions, Inc., (www.smartersolutions.com), a company that helps organizations improve customer satisfaction and the bottom line through the implementation of advanced measurement and improvement systems. He is the author of *The Integrated Enterprise Excellence System: An Enhanced, Unified Approach to Balanced Scorecards, Strategic Planning and Business Improvement*. Contact him at forrest@smartersolutions.com.

About the Author
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In a professional career spanning over a quarter century, Forrest Breyfogle has established himself as a leading edge thinker, a prolific author, an innovative consultant, a world-class educator, and a successful business executive. His work is documented in eleven books and over ninety articles on the topic of quality improvement.

A professional engineer, Forrest is also a member of the board of advisors for the University of Texas Center for Performance Excellence. He is the founder and CEO of Smarter Solutions, Inc., an Austin, Texas based consulting firm offering business measurement and improvement consultation and education to a distinguished list of clients worldwide, including BAMA, CIGNA, Dell, HP, IBM, Oracle Packaging, Sherwin Williams, Cameron, TIMET, and TATA. He served his country on active duty in the US Army for 2 years, and has played an active leadership role in professional and educational organizations. Forrest received the prestigious Crosby Medal from the American Society for Quality (ASQ) in 2004 for his book, *Implementing Six Sigma* (second edition). This award is presented annually by the American Society for Quality to the individual who has authored a distinguished book contributing significantly to the extension of the philosophy and application of the principles, methods, or techniques of quality management

He is a widely recognized authority in the field of management improvement and is a frequent speaker before professional associations and businesses. His earlier work in the field of management science has been widely acclaimed. A previous book, *Implementing Six Sigma*, sold over 40,000 copies and still ranks among the top Amazon books in Applied Mathematics/Engineering Statistics and Industrial Engineering /Quality Control.

He founded Smarter Solutions in 1992 after a 24-year career at IBM. The associates of Smarter Solutions specialize in helping companies throughout the world improve their bottom line and customer satisfaction through the implementation of techniques that are beyond traditional Lean Six Sigma and the balanced scorecard methodologies. His latest and most extensive work has been in the documentation of a new system of enterprise management, the Integrated Enterprise Excellence (IEE) system, in a series of four books. IEE provides a detailed roadmap that builds on and integrates the best practices of earlier disciplines like Six Sigma, Lean, TQM, PDCA, DOE, and TPS combined with innovative analytical tools to produce improvements at the highest level of an enterprise.

In addition to assisting hundreds of major clients in the wise implementation of improvement systems worldwide, Forrest has also developed over 300 hours of classroom instruction used to train executives, managers, and Black Belt practitioners to plan for, implement, and manage IEE systems. He also leads formal seminars and workshops worldwide.

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