Continuous Improvement - Implied Requirements

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The Journey to Security, Resiliency and Reliability

"Understanding what someone is saying is incomplete if you don't hear the meaning behind their words." – Rob Kish

This month's Lighthouse article stresses the importance of understanding the implied activities behind requirements. There are several Continuous Improvement (CI) methods that may improve this understanding, and this article explores the DMAIC concept as one approach to deepen your understanding of the meaning behind the requirements. Past articles focused on PDCA (Plan-Do-Check-Act) method, which coincides with this new concept, as CI methods often overlap and complement each other – so this article introduces another a tool to improve your understanding of implied requirements and contribute to your overall CI journey.

What is DMAIC?

DMAIC *(de-may-ick)* is a Six Sigma approach for problem solving, with its roots in Motorola and Toyota's Toyota Production System. Let's use the example problem statement of "consistent violations of specific requirements." What is causing these repeat violations? Is your lack of understanding of the implied requirements contributing to your lack of a process for consistent and sustained compliance?

The **D**efine stage is the first step in DMAIC. Lew's Lighthouse says an "implied requirement is an action your entity must perform to comply with the Standards, but that action is not directly stated in the text of a requirement. For example, CIP-006-6 R1 Part 1.2 requires a physical access control to manage access into a Physical Security Perimeter (PSP). [I]dentification of a PSP is required, even though such identification is not directly mandated by any Reliability Standard."

In the **M**easure and **A**nalyze phases, a continuation of the Plan process of PDCA, utilization of "CMMI for Development"[1] Practice Requirements Development (RD) is an option (CMMI stands for Capability Maturity Model Integration). This book discusses derived (i.e., implied) requirements as follows: "Derived requirements arise from consideration of issues implied but not explicitly stated in the requirements." In the Measure stage, incremental quantified goals are developed to measure your adherence to the issues or actions not explicit in the standard.

This is followed by analyzing the process actions to identify gaps, which all leads to a deeper understanding of the implied requirements. For the Analyze phase, CMMI describes a specific activity in the RD management practice, which is to "Analyze and Validate Requirements to address the analysis of requirements to define, derive, and understand the requirements."[2] Additionally, an excerpt from the whitepaper "How to do and use Requirements Traceability Effectively" (A. Scott Curtis, Pg. 5, 2000) says analyzing the requirements is to "parse each requirement or 'shall' statement to separately analyze and allocate to a lower level function derived requirement."

Improvements is the next step in DMAIC. Closing the gaps found in the Analyze phase involves implementing improvement initiatives in the hopes that they resolve the issue. But are you getting to the root of the problem? CI methods, such as a Kaizen brainstorm event, can help uncover root causes. These events should involve compliance personnel and SMEs who perform the activities per the implied requirements.

This cross-functional collaboration places compliance personnel in the shoes of the SMEs, which is another CI concept called Gemba. The book "Gemba Kaizen: A Commonsense Approach to a Continuous Improvement Strategy" describes Gemba as "the place where things happen," as SMEs whose job is to perform activities to meet compliance "are in the best place to contribute to improvements in the process."[3] This collaboration facilitates the compliance department's effective communication with SMEs on compliance matters, including audit preparation.

Control is the last phase of DMAIC. Implementing and following good controls can ensure your improvements are sustained. RF has developed

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[1] CMMI for Development

[2] CMMI for Development

[3] GEMBA Kaizen: A Commonsense Approach to a Continuous Improvement Strategy

several controls categorized as Preventative, Detective and Corrective. This is a subject covered in Denise Hunter's recurring Get Control of Yourself newsletter column and during RF workshops, and this month's Lighthouse article gives examples of controls for specific CIP requirements. The continued use and maturity of the appropriate controls will effectively improve and sustain your compliance processes. Fig. 1 depicts the DMAIC process, including its mapping to PDCA:
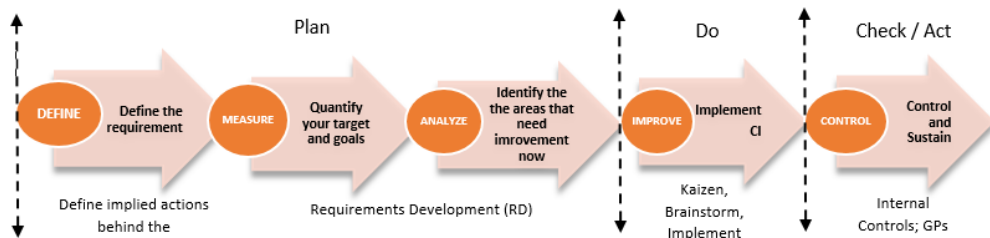
Fig. 1 - The DMAIC Process (with PDCA Mapping)[4]

Using DMAIC to Sustain Improvements

Improvements from DMAIC don't succeed in the long run if they are not sustainable, as sustainability is the foundation for excellence in CI. Adherence to General Practices (GPs) is important for this sustained success. Fig. 2 is a high-level description of GPs in an improvement cycle of sustainability and depicts its connection to DMAIC in that cycle. *(Fig. 2 includes Specific Practices[5] which are part of RF's Maturity Model)*:
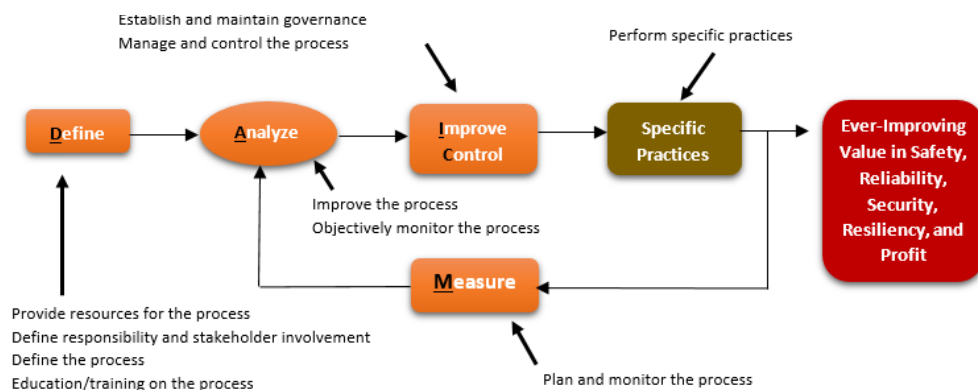
Fig. 2 - General Practices and DMAIC

Conclusion

NERC standards include important explicit, enforceable requirements that reduce risk on the grid, but the implied requirements also are important for improved and sustainable compliance and risk mitigation success. DMAIC can help uncover and understand implied requirements, develop that understanding, and provide a roadmap for your CI journey. RF can help you throughout the entire DMAIC Lifecycle through our Assist Visit program by:

D Identifying the risks behind your standard requirements and defining the controls you need, including their effectiveness for your situation

M Performing appraisals, as well as internal controls reviews during compliance audits, to measure how you are doing

A Assisting in making connections between your risks and your controls using scientific methods, which RF's Analytics department can provide

I Hosting CI events with help from RF's Facilitators, including Kaizen Events, Open Space/World Café events, and Design Thinking formats

C Coaching and mentoring by RF to help ensure the effective completion of your CI initiatives

For more information contact Brian Thiry, Manager of Entity Engagement.

Happy Holidays!

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[4]The DMAIC Process (with PDCA Mapping)

[5]Abstracts for Specific Management Practices