Lean Six Sigma and the Department of Defense

Project Overview

The Department of Defense (DOD) is a $518-billion-a-year business that employs five million people committed to our national defense. Think of it as a country-it would be the sixteenth largest gross domestic product economy, and its population would be greater than 43 percent of the world's countries. The DoD is also extremely complex: It has locations around the globe, 45 distinct organizations, and varying levels of security at each location. Its forces protect countries and citizens both in the United States and abroad, protect allies and political interests around the world, and provide humanitarian aid throughout the world as requested.

How does anything get accomplished, much less accomplished efficiently and effectively?

Business Case

There are many reasons to change. The DoD recognizes the simple reality that their strategic context is that operational needs are outstripping the current resourcing process. An incredibly fossilized systems approach built during the cold war at the height of the industrial age has now become an anchor dragging down the rapid/adaptive requirements needed for the information age.

Technology advances, and ever-complex economy, and dynamic political and military situations have increased DoD's need to be flexible in meeting each new crisis, which can come close behind or on top of the last. It is vitally important that the DoD be adaptive to these changes. The current culture of reactive action must be transformed to a proactive one.

Role of Process Improvement Methodology

In April 2007 the DoD established the DoD Lean Six Sigma Program Office. In May of 2008 an DoD directive was issued that formalized the DoD approach to improve productivity, mission performance, safety, flexibility, and energy efficiency. This directive institutionalized the DoD's plan to make LSS a permanent part of the DoD culture. LSS is a proven set of tools and methodology that can, when applied properly, provide flexibility and an effective improvement or solution to a problem. LSS is not a "cure all" – but it does give a structured framework for the organizations to follow as they seek to improve their processes.

The DoD focus was on mapping processes and producing measurable results such as reducing defects. The process led the implementing team to data driven conclusions and provided concrete proof of process improvement.

Key Actions

The LSS Program Office wrote directives establishing policy and assigning responsibilities to institutionalize Continuous Process Improvement (CPI) as one of the primary approaches to assess and improve the efficiency and effectiveness of processes supporting the Department's national defense mission.

The Office, together with DoD components, identified four main work streams that enable breakthrough performance. Trained Process Improvement Teams developed these work streams, and over the past year, worked together to build an enterprise-wide ability to improve benefits attributed to using LSS, such as reducing wasteful spending, better resource allocation, decreasing time in completing vital deliverables, and increasing efficiency.

Results

The benefits attributed to using LSS, such as reducing wasteful spending, better resource allocation, decreasing time in completing vital deliverables, and increasing efficiency are becoming more and more substantial as the model matures.

The Department of the Army is building a cadre of Master Black Belts who train others as part of their certification process. The Army also is implementing one of the most extensive deployments and has estimated savings of **$8 billion through 2010**. Depots are winning Shingo prizes for improved processes, and installations around the world are using LSS to leverage efficiencies of scale, improve safety reporting, and rack up cost-avoidance dollars, all while improving combat capability and providing benefit to the war fighter.

The Department of the Navy (DON) is using LSS in projects across the component, from the Navy Operational Logistics Support Center to the Naval

Surface Warfare Center and the Portsmouth Naval Shipyard, where the savings on one project alone were **$28 million**. On another project, the Navy cut a requisition **cycle time on one process by 50 percent.**

Within the Navy Secretariat's transactional processes, LSS has resulted in a **48% reduction in cycle time** for Below Threshold Reprogramming actions, while the Justification and Approval process for contract awards experienced an **87% cycle time reduction** with significantly increased automation. Numerous other DON commands and activities have achieved efficiency and productivity improvements averaging a **4-to-1 return on investment ratio** in 3,300 rapid improvement events and projects.

The Department of the Air Force leadership has issued clear direction to implement LSS through the Air Force Smart Operations for the 21st Century Concepts of Operation and Implementation Plan. LSS is making an impact in the Air National Guard as process improvements give back time to people and organizations using smart operations. The time savings allow more training and certification of Airmen. The Air Force also won a prestigious award for streamlining the maintenance and repair process of the C-5.

The most significant change for DoD's performance management initiative has been the change in the deployment paradigm. To propel this Enterprise-wide transformation, Department deployment leaders have carefully examined the results achieved over the last decade and agreed to work together to solve challenges no one could solve alone. This marks a defining milestone in the maturity of the deployment. The results are very encouraging and collaboration within DoD has never been better. DoD has moved away from simply selecting low hanging fruit and local pain points for the types of projects it is undertaking. For instance, using the QFD (Quality Functional Deployment) as the start point for guidance, DoD has been able to track the cascading priorities in the Supply Chain Value Stream to project improving the shipping container process in Iraq and Afghanistan. This is a $600M opportunity for improvement.

The Office of the Secretary of Defense has completed numerous projects that have had a cumulative effect of reducing processing time over 100 man-years.

Tools and Processes Used

Value Stream Mapping
Process Mapping
Kaizen Events
Quality Functional Deployment
Root Cause Analysis
Focus Groups/Workshops
SPC