



# Continuous Process Improvement (CPI)

*“Improving processes by identifying the value-added activities and eliminating the waste”*

## FACT SHEET

### What is Continuous Process Improvement defined?

Continuous Process Improvement (CPI) is the strategic, never-ending, incremental refinement of the way we perform tasks. CPI employs a collection of methodologies including Lean, Six Sigma, Theory of Constraints, Business Process Redesign and others. All methods of CPI require that current processes be studied, documented, and thoroughly questioned. Good change management practices are required for successful CPI implementation.

### How can we get started?

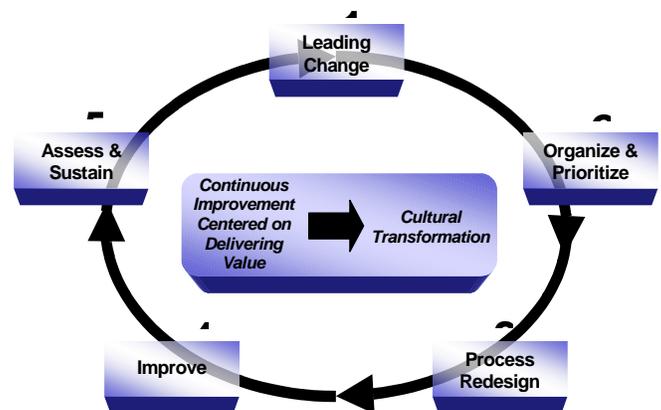
Lean, also referred to as Kaizen or the Toyota Production System, is often a good starting point for CPI initiatives. Lean focuses on creating perfect value for the customer with perfect processes, and with no waste involved in the value creation. At least 75-80% of the steps in every repeatable process are non value-added. Using Lean, a comprehensive first pass can yield a 50% process improvement in resource consumption, cycle time, quality, and cost. The key lean principles are:

- Specify what does and does not create value from the customer’s perspective.
- Identify all the steps in the current process and determine which contribute value.
- Make those actions that create value flow without backflows, waiting, rework or scrap.
- Only make what is pulled by the customer, in other words, what the customer wants.
- Strive for perfection by continually removing successive layers of waste.

### How can we use other CPI techniques?

There are many tools available under the CPI umbrella to improve processes. Once value is defined, value streams are identified, processes are properly linked, and good metrics have been established, Six Sigma can be used to reduce variation, drive repeatability and improve quality. Sometimes, processes reveal themselves to be constrained by one part of the process. In such a case, Theory of Constraints can be employed to break bottlenecks and render the overall process capable. If the process is completely insufficient, Business Process Redesign may be the most efficient means of overhaul. Resources are available to assist with these initiatives in the form of books, training and experienced personnel.

The Air Force CPI model below includes the Continuous Process Improvement steps required to successfully drive a cultural transformation.



What is amount of the value added work in most processes?



Only 5% – 30%  
— James Womack

What is the value added time in most processes?

Only 0.5% – 5%  
— George Stalk

### How is CPI tied to eLog21?

eLog21 is focused on reengineering Air Force business processes and operations, which will ultimately change our logistics structure to better support the warfighter. CPI is at the core of the Air Force’s efforts to reengineer its

logistics processes as part of eLog21. CPI is critical to redesign logistical processes, creating a new business structure enabled by new systems. This transformation is the eLog21 vision.

### ***How is CPI being implemented within the eLog21 campaign?***

CPI is a key element of two eLog21 initiatives: Purchasing and Supply Chain Management (PSCM) and Depot Maintenance Transformation (DMT).

The PSCM initiative's primary objective is to improve the logistics supply chain management processes. PSCM is applying CPI to enhance these processes by identifying which activities add value and which create waste. PSCM is showing positive findings after launching three "Path Finder" commodity councils that investigated current supply chain processes at the ALCs, focusing on miscellaneous aircraft parts, support equipment and landing gear, and wheel and brake systems.

The Depot Maintenance initiative is implementing a command-wide "CPI" approach to integrate shop floor process improvements with production support processes. It is using Lean to reduce process times and cost, which has resulted in a B-1B reduction in stab rework from 56 to 39 days; a reduction of F-100 inlet fan work-in-progress by \$31 million; a reduction in generator repair time from 22 days to 14 days; and a reduction in brake rework from 46 days to 12 days.

CPI initiatives are positively impacting Air Force Logistics operations and are here to stay as the Air Force's primary method for process reengineering. As Major General Kevin Sullivan, commander of Ogden ALC, Hill Air Force Base, Utah states, "As I go out and talk to teams that are involved in Lean events, one of the most prevalent questions is, 'Is this going to go away like TQM did; is this going to go

away like other initiatives have?' So, what we need to convince them is it is worthwhile to invest their time and energy into doing things better because we're in this for the long haul."

### ***How will the Air Force look tomorrow as a result of using CPI techniques?***

Currently, logistics process/productivity improvement methodologies are not focused on the customer and consistently getting the right supplies and equipment to the warfighter at the right time. The Air Force end-to-end cycle time for buy parts (Demand Planning + Purchase Requisition + Admin lead time + Production lead time) averages 660 days; a \$28.8 billion inventory exists across the Air Force supply chain, in part, due to long cycle times; and deficiency reports (DRs) from customers average over 80 days to resolve

Tomorrow, using CPI, the Air Force will be able to better meet customer needs by decreasing cycle time, thus getting the right equipment and supplies to the warfighter in a more timely manner. Applying CPI will help the Air Force revamp its logistics processes and improve cycle time and quality by finding the non-value add activities in processes and then eliminating them. Reliable, capable, and efficient processes help free up resources that might be otherwise engaged. This is important as the Air Force is faced with a declining resource base due to retirement or transfers of duty. Fifty-one percent of AFMC logistics and 33.5% of AFMC contracting and manufacturing professionals are eligible to retire within five years. CPI will allow the Air Force to do more with less.

### ***How can I learn more about Continuous Process Improvement?***

For more information, we invite you to visit our website at: <https://www.my.af.mil>

AF Home > AF Transformation Initiatives > eLog21

## **Continuous Process Improvement**

*"Improving effectiveness by linking processes, increasing value, eliminating the waste, reducing variation, and pursuing perfection in all we do."*