

Lean Operations Primer Part 1

By Bill Drexler

In this tough economy, one of the buzzwords that you may be hearing more often is Lean. What is it? Becoming Lean is a systematic effort to eliminate all waste in your business using ideas and techniques that evolved from the Quality movement of the 80's and 90's. While running Lean is a great idea, it's not a new one. Being a Philadelphia area company, I have to point out that Lean ideas can be traced back to Benjamin Franklin's "Poor Richard's Almanac." You've all heard the expression, "a penny saved is a penny earned." He also talks about the ills of too much inventory in "The Way to Wealth." These ideas grew and were refined in the manufacturing arena by Henry Ford, the first to mass produce automobiles. More recently, the specific tools used in Lean thinking grew out of the Toyota Production System. So, what defines a "Lean Operation?" Let's start with some definitions.

- ◇ Lean is doing more with less. Becoming lean involves the total elimination of waste in every process.

- ◇ Value is defined in terms of specific product and services with specific capabilities offered to customers at specific prices.

- ◇ A Value Added Activity is a step or task in a process that increases the salability or function of the product. A step "adds value" if it takes us closer to creating something that the customer is willing to pay for.

- ◇ A Non-value added activity is a step or task in a process that does NOT increase the market form or function of the product.

- ◇ Value Stream The set of all actions required to bring a product or service from concept to delivery to the customer.

- ◇ Waste is anything that absorbs resources but adds no value. The 7 Major Wastes are: Overproduction, Waiting, Transporting, Inefficient Processes, Unnecessary motion, Defects, and Excess Inventory.

- ◇ Flow is the progressive achievement of tasks from idea to customer with no waste.

The Key Concepts behind Lean Thinking are time, cost and optimization. Time is the single best indicator of waste in the process. It's also a significant indicator of competitiveness. A time-based strategy helps eliminate waste. Think about your processes. Each step in a value stream (process) can be classified in three ways:

- ◇ The step adds value because it moves us closer to meeting customer requirements.

- ◇ The step is necessary to the process (so cannot be eliminated) but does not add value.
- ◇ The step adds no value; it is “waste”.

Now, take a look at one of your processes and calculate the percentage of the time spent completing a process which is considered value-added vs. nonvalue added. Don't be surprised if you find that 80% of your process is considered non-value added.

Lean thinking requires a different view of Cost also. In the old model of cost: $\text{Cost} + \text{Profit} = \text{Price}$.

In the Lean model: $\text{Price} - \text{Cost} = \text{Profit}$. What is the difference between these two? What happens when you reduce cost in each model?

Optimization of a single process does not necessarily optimize the whole system. Your system of delivery of product or service to your customer consists of multiple interdependent steps. Flow is only achieved when all processes are optimized.

The Lean Tools that are used to optimize your system are: Value Stream Mapping, Visual Controls, Quality Assurance and the 5-S Process.

Value Stream Mapping is the identification and mapping of each step in a process, the times needed to accomplish each step and potential opportunities for elimination of waste. Mapping helps you visualize the process at the company level not just the single process level. Once waste is identified, it can be eliminated.

Visual Controls are simple signals that provide an immediate understanding of a situation or condition. They are efficient, self-regulating and worker managed. Some Examples are Job Cards, Color coded forms, Labels on cabinets, drawers, files, Labels on equipment, Checklists.

There are multiple Quality Assurance methods; the key is in finding the best approach for your business. In Lean thinking, the Quality Assurance emphasis is on prevention of problems and continuous improvement. When processes are re-engineered, prevention of potential problems is key to having a process that flows. Continuous improvement is the idea that Lean is not a project with a beginning and an end, you should always be looking for ways to eliminate waste.