

Successful Supervisor Part 49

Getting to a Lean Culture

by Bob Whipple, MBA, CPLP

The Lean Thinking program is an outgrowth of the Toyota Production System that was developed in the early 1990s. Many organizations combine the concepts of Lean Thinking and Six Sigma into a single thrust they call “Lean/Six Sigma.” My preference is to think of these initiatives separately, since they were derived by different groups at different points in the evolution of improvement efforts and have vastly different tools and objectives. It is true that you can combine staff groups to go after the gains of both programs in one thrust, but I prefer to keep them separate.

For supervisors, it is important to understand what Lean Thinking entails and how to manage a process to eliminate all waste. There are numerous techniques and tools for doing this, and I will discuss a few of the main ones later in this article.

Objectives

First, let’s contrast six sigma and lean in terms of their objectives. The primary objective of six sigma is continuous improvement toward process perfection. The objective of “Lean” is the relentless quest to eliminate all waste (or MUDA, which is the Japanese word for waste).

When we think of waste in our personal life, it is all about the stuff that gets thrown away. In the “Lean” lexicon, waste takes on a much different perspective. In lean, we work on seven different types of waste simultaneously, and only one is the stuff that goes in the garbage can. Here are the seven types of waste. Note the common way to remember the seven types of waste is by the acronym TIM WOOD.

1. Transport

Any time we move products or sub assemblies, we are incurring costs and waste that the customer is not interested in paying for. Think of it this way, if you purchase a car, you are not at all interested in the pathway it took to be manufactured. You are interested that the car is perfect in every way, but do not want to pay extra to have it go to six different cities while it is being manufactured in pieces.

2. Inventory

Inventory is waste because it cannot be sold. It also takes up space, which is expensive to maintain. A good lean program can usually cut the space used to manufacture a product by at least 50% by cutting down on the level of inventory or in-process goods.

3. Motion

Similar to transport, the customer is not interested in paying for the motions necessary to produce a product. If you can combine operations to eliminate motion, you have reduced the MUDA for the entire process.

4. Waiting

Waiting is one of the largest forms of waste for most processes. If you tour through even the best factories, you will see pallets of product waiting to be serviced by the next step in the process. I recall a Tom Peters program entitled **“Speed is Life”** where he noted that in an average manufacturing cycle for a product that takes two weeks to complete, there is a good solid 18 minutes of actual work being done on the product. The remainder of the time is wasted because the product is sitting and waiting for the next operation.

5. Overproduction

If we have customers who want to buy five refrigerators from us today, and we make eight refrigerators, three of them represent wasted effort. There is no immediate demand for the product, so it goes into inventory and becomes a form of waste until there is a demand for it.

6. Overprocessing

This kind of waste is all about the number of process steps that are required to actually make a part. If you have to pick up a carburetor 12 times in order to assemble all the parts onto it, that is a lot of picking up. Suppose you could reduce the number of times needed to pick up the part to just two. That would save 10 process steps to make the same part.

7. Defects

If a product is defective, it cannot be sold, so it is either reworked (which requires extra resources) or it is discarded (which wastes the materials and labor put in to that point). This is where Six Sigma and Lean intersect. We want all of our processes to be so perfect that they never produce any defects.

Some of the More Popular Lean Tools

If I were to describe all the tools used in lean thinking, this would be a book rather than an article. Let me focus here on just five of the most useful tools.

1. Process Flow Map

A Process Flow Map is a diagram of the entire process on a large piece of paper. There are specific symbols that depict the various parts of the process flow and the movement of materials as well as any inventory points. The idea is to allow a team of technical people to actually “see” the whole process and how it works at once. It is imperative to have a fully trained person actually construct the Process Flow Map, or the whole analysis may be flawed.

There is an excellent book on how to construct Process Flow Maps. It is entitled “Learning to See,” by Mike Rother and John Shook. The book deals with many of the tools to eliminate MUDA and how to use them correctly.

2. Kaizen

A Kaizen is an event that takes place on the process site, where a team actually takes the process apart physically and puts it together in a more streamlined configuration. There are many techniques used to accomplish a Kaizen, such as “spaghetti diagrams” that trace the actual movement of the process on a diagram. The caveat here is to not try to perform a Kaizen unless you have a qualified facilitator and really know what you are doing. A poorly done Kaizen can do a lot of damage. You may be able to take the process apart but fail at putting it back together.

3. 5 S

The process of 5 S is built around five Japanese words that all begin with S.

Seri – Sort

Seiton – Set in order

Seiso – Shine

Seiketsu – Standardize

Shitsuke – Sustain

The idea is to have a place for everything and keep everything in its place. When you walk into a 5 S operation, it is neat and tidy with everything available but absolutely no clutter to be seen.

4. Poka-Yoke

Poka-Yoke means to make the operation fool proof. If you simply cannot put something together incorrectly it has some good poka-yoke thinking associated with it. The best

example in our personal world is the three pronged electrical plug. There is no way to put it together incorrectly. When you think of it, we have many examples of good poka-yoke thinking that we use every day from symmetrical ignition keys to USB connectors on computers. Something that is not poka-yoke is your shoes. It is possible, albeit not comfortable, to put them on the wrong feet.

5. Kanban

Kanban is a philosophy that allows a continuous process while maintaining a minimum of inventory of parts. You work off a two bin system. You have an active bin where you are drawing parts until it is empty. You then move the spare full bin into place to continue the process, and the empty space (called a Kanban square) is the signal to go get another bin of parts.

Administering Lean

The lean philosophy is a very powerful mindset for any operation. As a supervisor, you must be careful to administer the effort with care and professionalism. Make sure the effort is well staffed with qualified people. Trying to do lean manufacturing on a flimsy base can produce great confusion and lead to expensive rework and disillusionment among the workers.

Another consideration is that lean efforts are usually being performed while production is still running through parts of the operation. One cell might be down while the work is being done, but the rest of the plant is working. It takes a lot of coordination and planning to accomplish a lean program, but the result is well worth the effort.

In addition to keeping parts of the process running, the supervisor needs to ensure the safety of all personnel even though parts of the operation are not in a normal steady state of operation. In general, you should spend as much time planning a lean activity as it takes to actually accomplish it.

Eliminating all forms of waste and using the tools of Lean Thinking allows the supervisor to produce the maximum saleable products in the least amount of time and at the lowest possible cost. Think of lean as an ideal or state of perfection that you never actually fully achieve. With a philosophy of “continuous improvement” you refine and make the process more perfect every day. The techniques must become a way of life to be able to sustain the gains, but they are well worth the effort.

This is a part in a series of articles on “Successful Supervision.” The entire series can be viewed on www.leadergrow.com/articles/supervision or on this blog.

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