

The Lean Perspective

LEAN ENTERPRISE...*What is it and why it is essential to business survival in the new millennium?* By Patrick Lucansky and Robert Burke.

What is this thing called Lean? Is it different from JIT, TQM, Reengineering or World Class? Why do we need to change the way we are working, we are profitable? Are these questions that have crossed your mind? Many have wrestled with these and other similar concerns over the last couple years. The first thing we need to do is understand what Lean is all about.

Lean has its origins in the teaching and writings of TQM and JIT, which espouse the idea of “*delighting the customer through a continuous stream of value adding activities.*” Specifically, it is an extension of the phrase “world class” as defined by Dr. Richard Schonberger as “... *adhering to the highest standards of business performance as measured by the customer.*” In other words, Value is always defined from the customer’s perspective. Understanding your customer’s needs is a prerequisite for driving Lean principles and methodologies.

A commonly held definition of **Lean Enterprise** is, “a group of individuals, functions, and sometimes legally separate but operationally synchronized organizations.” The “value stream” defines the Lean Enterprise. The objectives of the Lean Enterprise are to:

- correctly identify and specify “value to the ultimate customer / consumer” in all its products and services
- analyze and focus the value stream so that it does everything from product development and production to sales and service in a way that activities that do not create value are removed and actions that do create value proceed in a continuous flow as pulled by the customer.

From the time a customer need is recognized until it is satisfied, the process and all its elements must add value for the “value stream” to be meaningful. The basic components of this Lean system are waste elimination, continuous flow, and customer pull.

As defined by John Krafcik, in his book, The Machine that Changed the World “Lean production is “lean” because it uses less of everything compared with mass production: **half the human effort in the factory, half the factory space, half the investment in tools, half the engineering hours to develop a new product in half the time. Also, it requires far less than half of the needed inventory on site.** The expected results are fewer defects, while producing a greater and ever growing variety of products.”

Lean applies to any organizational type and can be applied to all areas within the business. Essentially, Lean is a three-pronged approach incorporating *A Quality Belief*, *Waste Elimination* and *Employee Involvement* supported by a *Structured Management System* (See *diagram 1*). Basically, we've taken simple processes and complicated them resulting in longer lead-times, reduced flexibility, increased inventories and the inability to meet customer demands.

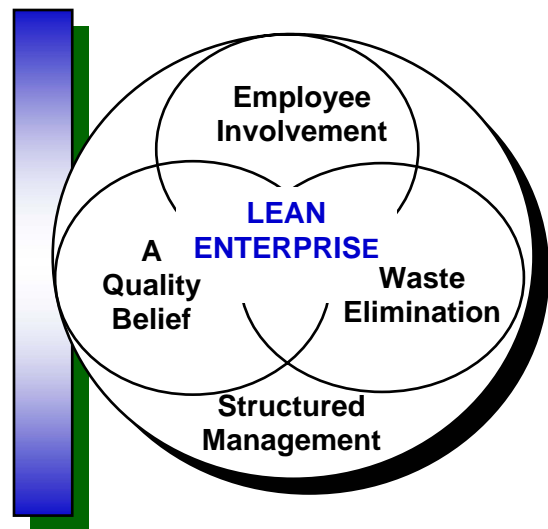


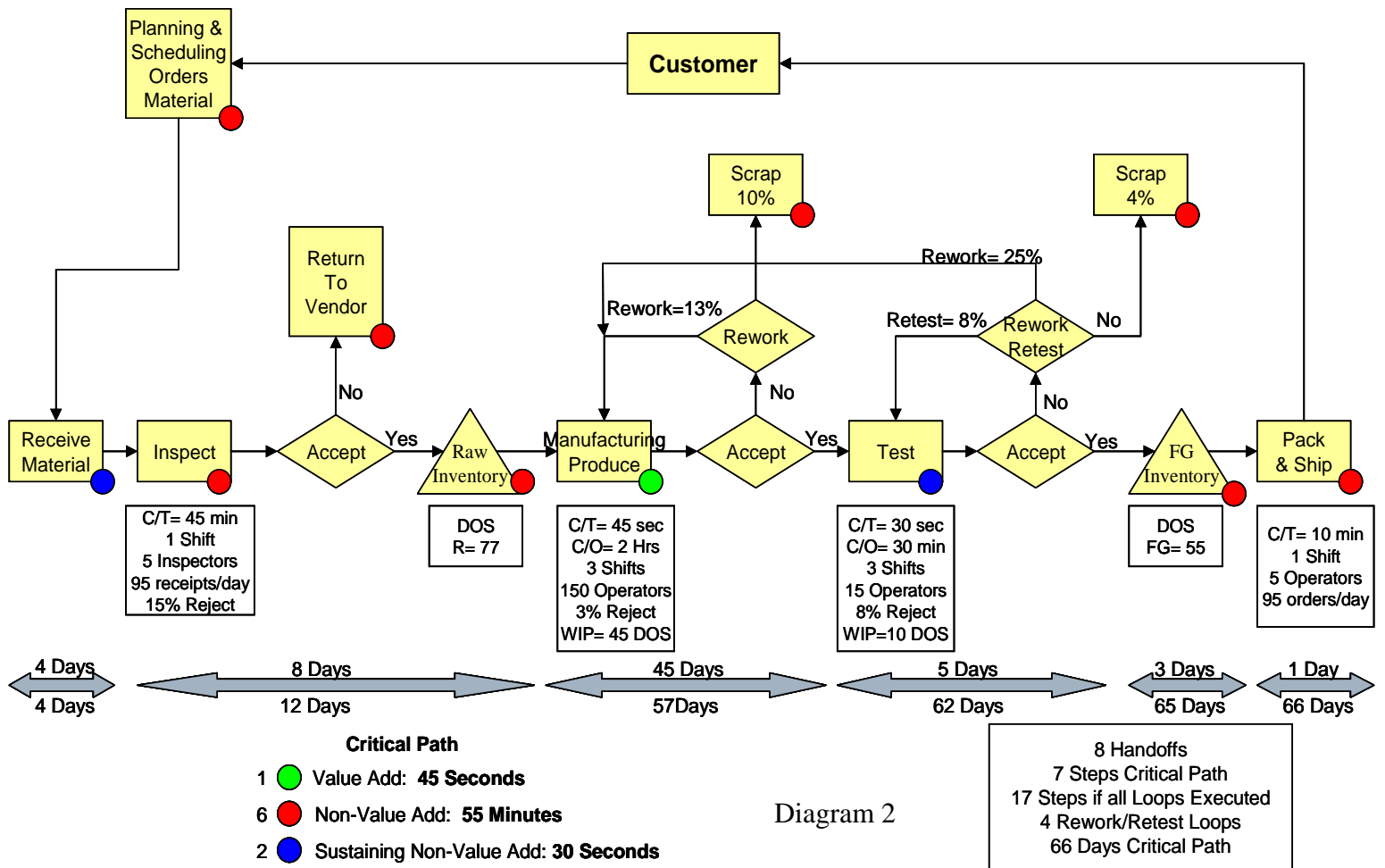
Diagram 1

The lean objective is a continuous rapid flow of “Value-Adding Activities.”

The first principle of Lean is to ***satisfy the needs of the customer by performing only those activities that add value in the eyes of the customer.*** Put yourself in your customer's shoes, peer into your organization and look around. You will find many activities occurring which add **no value** and often times prevent you from meeting customer demands. Identifying both value added and non-value added activities provide you with a visual map of your processes.

The second principle is to ***define the “Value Stream”*** (see diagram 2). The goal is to identify material and information flows currently required to deliver a product or service. This activity will highlight bottlenecks, handoffs, lead-time and where inventory. The result is a pictorial of your current processes from start to finish and all parts in-between. The key is to focus on the 65-95% of non-value added actions occurring.

The third principle of lean is to ***eliminate waste***. Waste in the value stream is any activity, which the customer is not willing to pay for since it adds no value to the product or service and often times, is consuming resources. Waste exists in all parts of the business – front office to the factory. This effort results in redefining the current value stream to one of value adding activities and what we call ***“Sustaining” (SNVA)*** activities. Sustaining steps are defined as, non-value-added activities performed for one of two reasons, (1) required to by law or regulation or (2) because it contributes to business effectiveness. This provides an outward focus and responsiveness to ever-changing customer needs as opposed to traditional redesigns which are outward focused as they relate to your inward focused needs.



The lean transformation is directed by guiding tenets such as:

- Positive, clear communications
- Ensure “no-blame” culture
- Work through cross-functional teams
- Staff involvement at every stage
- Process maps on display for comments
- Remove non-value added steps, hand-offs, rework loops
- Agree design principles with all
- Fix the root cause not the symptom
- Ensure solution supports departmental interfaces
- Incorporate Continuous Improvement

The Lean change effort defines the tools and principles that determine how all aspects of a business operate from sales through distribution. As a result, the right environment for all the competitive elements of quality, design, production, procurement, service and delivery are addressed consistently. Typically, we see benefits to the business like space saving of 50-80%, inventory reductions of up to 90%, reduction of lead-time by 50-75% and quality improvements of up to 300%. In order to be successful, we must follow a rigid-disciplined process. Depending on “low-hanging fruit” opportunities, savings can be realized in several months and have an immediate impact to the bottom line. However, one must be committed for the long run as some change efforts can take as long as 2 years (especially those centered around changing corporate culture).

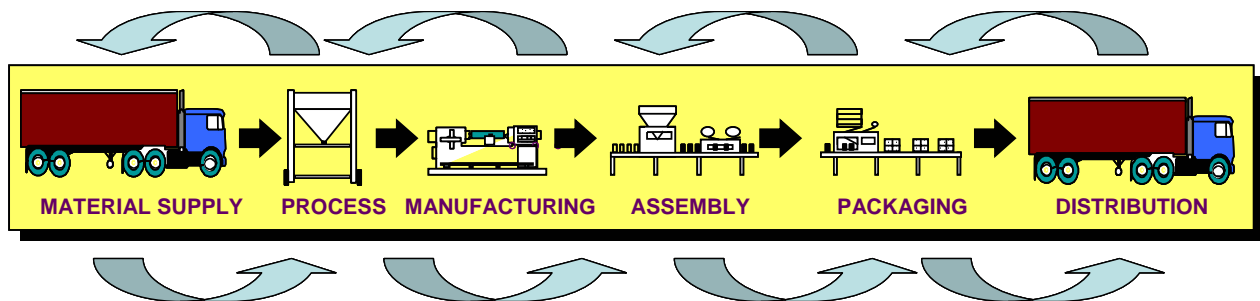
The transformation starts with (1) identifying the need for change, (2) communicating that need for change, (3) defining the “value stream” current and future, (4) identifying those changes which address the need for change and solve the situation at hand (5) developing change plans (6) measuring the results and (7) going back to 1 and starting over. While there is no fail-safe method for a successful transformation, following a regimented approach is the best advice. When programs do fail, many of the reasons can be traced to a few common themes. Some of these pitfalls of implementing lean are:

- Not involving the people whom will actually do the work
- Not educating the ENTIRE work force
- Not having backing and continuous commitment from top management
- Not understanding why you need to change
- Not having a process owner of the change effort
- Not have a clearly identified need and reason for change
- Believing that “Your industry is too different to use these techniques”

Lean is intolerant of failure, failure of suppliers, processes, people to perform, machines to operate and most important, uninspired leadership. As you streamline the value chain, disruptions to your process will immediately halt your ability to meet customer demands. While this is not desirable, it does allow us to focus in on the issues and solve them, as these islands of lead-time no longer hide them. The goal is to develop a sustained and uninterrupted flow of value to the customer by effectively converting raw materials (or knowledge) to finished goods (or services) across the entire supply chain (see diagram 3).

Remember, techniques get you there principles keep you there.

Diagram 3



... Synchronize All Steps in the Process

Eliminate the Cause of the Pause !

We believe that Lean Principles can be applied to any environment (high/low volume, high/low mix, job shops, continuous flow and traditional batch facilities) even regulated environments like Pharmaceuticals, Biotech's and Medical Devices. Every system or process contains waste. Every firm (from manufacturing to distribution to service-related) contains activities that add no value to the customer. The tools and techniques used will depend on specific situations and needs. Lean is a holistic approach to reduce waste in the value stream of any process. Like any other paradigm, Lean requires constant attention and commitment, every day of every week of every month of every year. It is a never-ending effort. Toyota went lean over thirty years ago and is still at it.

For question or comments relating to the article or lean tools and techniques, please email authors.

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