

## WHY LEAN?

- Free-up necessary resources to grow
- Respond to customer orders quickly
- Minimize inventory
- Shorten cycle time
- Pull lead time closer to cycle time
- Reduce waste, focus on value delivery
- Get to root causes of poor quality and attack

### Lean Thinking

Lean Thinking specifies value, then lines-up value-creating actions in the best sequence, conducts these activities without interruption whenever a customer requests them, and performs them more and more effectively [do more and more with less and less – *less human effort, less equipment, less time, and less space* – while coming closer and closer to providing customers with exactly what they want].

I believe the best argument for implementing lean techniques are that it frees-up resources and cash to go forward on executing profitable growth strategies, backwards to the conventional approach of trying to grow without needed resources and cash to deliver. A Lean Enterprise sets aggressive cost targets (determines waste-free cost), then strategize choices:

- Reduce prices
- Add features
- Add services
- Expand distribution and service network
- Take profits to underwrite new products

Keys to growth are improvements in three areas;

1. product development (design, engineering, marketing)
2. order-taking (sales, marketing, customer service, scheduling, delivery)
3. execution (production, procurement, distribution).

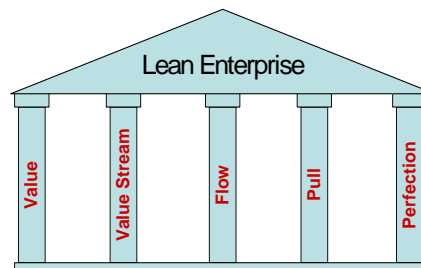
Firms have streamlined product development process and brought new products to market (TTM) that accurately address customer wants in months, rather than years, through forming product teams (across functional borders) to reduce backflow, rework and facilitate single-piece flow production and delivery.

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Order-fulfillment is achieved in a day, rather than weeks, through linking with production and eliminating the intermediary (non-value added) production control steps.

Output fulfillment is achieved in hours, rather than weeks, through continuous process improvement, right-sizing tools and changeover reduction necessary for single-piece uninterrupted production flow pulled by the customer.

### LEAN PILLARS



A **Lean Enterprise** has achieved correctly specified **VALUE** from the customers' perspective, identified all actions in the **VALUE STREAM** to deliver that value, removed any actions not creating value and make those actions which do proceed in uninterruptable **FLOW** as **PULLED** by the customer and has put in place mechanisms to pursue **PERFECTION** throughout the whole value chain.

**VALUE** critical starting point (*providing the wrong good in the right way is still waste*)

Value, through the eyes of the customer, focuses on what the customer really wants. In other words, why the customer buys your good or service (solution to a problem). Purpose of correctly specified value for each product delivered is to make sure that focus of the value stream is on the most critical deliverables as defined by the customer. Even if these deliverables are well defined and intuitive, the exercise will serve as a starting point for defining the value stream, work to improve customer relations (it's nice to be asked) and might yield surprising results.

**VALUE STREAM** actions required to bring a product through *problem solving* (concept to design to production launch), *information management* (order-taking to scheduling to delivery), and *physical transformation* (raw material to finished product into the hands of the customer).

Know where you are! **Value Stream Map** - a logical entry point on the lean path; a one-page common language illustration of:

- Product flow
- Information flow
- Key performance metrics

Identifying the entire value stream exposes enormous mounds of waste.

Mapping the current value stream illustrates the path of actions required to deliver value. Actions are designated as;

1. Value added (creates value as perceived by the customer)
2. Business non-value added (does not create value, but currently required by product development, order fill or production systems and can't be eliminated just yet, but should be streamlined)
3. Non-value added (not required by the business to deliver value and, therefore, can be eliminated immediately)

This, coupled with the Future state map, earmarks milestones on the roadmap to improvement.

The seven **DEADLY** wastes

In the process of building a Current state map, wastes are spot-lighted, their impacts are illustrated on the map and evident in the metrics.

1. **Overproduction:** rework likely, but at least non-value creating transport (store, pick, re-process) are unavoidable (worst form: contributes to other six)
2. **Waiting:** for next processing step, costs materialized by creating WIP
3. **Conveyance:** unnecessary transport between process villages, interim storage
4. **Processing:** over processing due to

poorly designed tools or product design

5. **Inventories:** more than absolute minimum for a precisely tuned pull system
6. **Motion:** unnecessary movement by employees during course of their value-creating work (e.g. - looking for action items, tools, instructions, help, etc.)
7. **Correction:** inspection, rework, scrap, product complaints, warranty events, service complaints, returns and the list goes on

**FLOW** is the delivery of a good or service without interruption.

This requires breaking down the conventional thinking of functional work centers creating batches of products (batch & queue). Things work better when you focus on the product, rather than on the organization or equipment, so that activities needed to design, order and provide a good or service occurs in a continuous flow.

To get goods to flow, the lean enterprise takes critical concepts of JIT, set-up reduction, one-piece flow, level scheduling, right-sizing equipment, and carries them to their logical conclusion by putting products into continuous flow whenever possible.

**PULL** means that no one upstream should produce a good or service until the customer downstream asks for it.

Flexible flow allows for immediate changes to demand, as opposed to push thinking ('fill the channel').

Value-creating, uninterrupted flow allows for quick response to customer pull and thus, you can throw out the sales forecast (except long-term capacity planning).

Pulled-demand is instantly reflected in new supply rather than the situation of misjudged supply perennially chasing demand and creating chaos in the process (lower margins). Demand becomes much more stable and level when the customer knows they can get what they want right away.



deployment to work towards those Improved States on the way to the Future State vision.

**PERFECTION** in simplest terms is the complete elimination of waste en-route to perfection, a relentless pursuit on a moving target.

Much of the potential of lean thinking is lost unless you take this final principle to heart. As organizations accurately specify value, identify entire value streams, make value-creating steps for specific products flow continuously, and let customers pull value, with continuous improvement to reduce effort, time, space, cost and mistakes while offering a product closer to what the customer actually wants, then targeting on perfection doesn't seem that crazy.

Don't be satisfied with measuring up favorably to your current competitors, celebrate improvement and push forward. Your true competitor is perfection. Don't waste resources on bench-marking (except for marketing purposes and fast-tracking solution generation) channel resources to improvement immediately. High achievers determine the gap between current and perfection, set time-tables and goals aggressively, and go forward to achieve seemingly impossible tasks.

What do you need to keep you progressing along the Lean Path?

**Policy Deployment** Key to getting it done

The idea is for top management to agree on a few simple goals for transitioning from mass to lean, select a few projects to achieve these goals, designate people and resources for getting the projects done and to establish numerical improvement targets to be achieved by a given point in time.

A couple of closing thoughts:

For every journey, you need a map. Value Stream Mapping is critical to getting on the Lean path through documenting Current State operations and visioning a Future State.

Realization of Mass to Lean starts with a Value Stream Plan to execute policy

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