



Lean Thinking

Overview:

Lean thinking is the name given by Western academics to the Toyota Production System. It is acknowledged by many as the source of competitive advantage of Toyota. Lean Thinking came to the West following an US study that resulted in the publication of "The Machine that Changed the World" in 1990.

Lean Thinking has two main themes: it is customer driven and there is a focus on waste reduction.

Lean Thinking is often defined as a four-step process where:

- Top Level Commitment- towards a mid-to long term vision (with budget)
- Process and Procedures - check for waste and ineffectiveness
- Respect for People - develop the workforce and encourage innovation at work
- Continuous Improvement - waste reduction, process improvement

Lean Thinking is now moving beyond manufacturing to construction, customer service, financial services, supply chains and the public sector.

The popularity of Lean Thinking ("... 30% cost savings!") has resulted in a plethora of acronyms (much to the delight of consultants) as well as a jargon that uses Japanese terms ("Type 1 *muda*" - or "waste" to you and me).

Lean Thinking actually comprises quite a bit common sense -

- If the workplace is tidy and neat, you are more likely to spot problems early.
- Go to where the problem is, instead of trying to solve it sitting in the office.
- If you respect your workforce, they will repay this with innovations.
- When you are driven by customer demands, you will not produce stuff nobody wants to buy (This assumes your customer knows the market).

Lean Thinking has a large range of tools now familiar to many in industry, including:

- Just-in-Time / Kanban
- Kaizen (Continuous Improvement)
- 5S / 5C / CAN DO - workplace organisation
- Poke-Yoke (Fool proofing by design / Designing out problems)
- Visual Management - systems that highlight problems visually (empty box = no stock)
- *Andon* - a stop/go light system in manufacturing
- SMED (Single Minute Exchange of Die) - moving from one product to another on the same production line with minimal delays and defects

- Value Stream Analysis - a system analysis tool where the value-added can be shown from raw materials to finished products

Origins:

The Toyota Production System (TPS) was invented by Toyota in the late 1940's to enable it to compete with General Motors and Ford. It took Toyota several decades to develop the entire suite of tools.

“Lean Thinking” was coined by Womack and Jones in their 1996 book entitled “Lean Thinking”.

Deploying Lean Thinking:

To maximise the benefits of Lean Thinking, the commitment needs to be total. It is a long haul (it took Toyota several decades, remember). Short term commitment to Lean Thinking usually involves deploying tools like 5S or some form of Kaizen. These all deliver results but are unlikely to deliver sustainable cost savings and quality improvements unless they are backed with top level commitment, staff training and development.

Issues about Lean Thinking:

Lean Thinking is occasionally contentious because it can result in reducing staff numbers when the processes are improved. Theoretically, the surplus labour should be retrained and redeployed to jobs but often, employers are glad to be rid of the surplus workforce.

Occasionally, the Lean mantra of minimal inventory (save money, save storage space etc) can be counterproductive. After the Kansai earthquake in Japan (1995), Toyota found that some of its suppliers could no longer deliver parts in the Just-in-Time system. Toyota was so “lean” that it did not have additional suppliers and the factories had to shut down for a considerable period of time.

Resources:

The Lean Enterprise Institute: <http://www.lean.org>

The Lean Enterprise Academy: <http://www.leanuk.org>

Ohno, T., The Toyota Production System, Productivity Press 1988

Womack, J., Jones, D. & Roos, D., The Machine that Changed the World, Macmillan 1990

Womack, J. & Jones, D, Lean Thinking, Simon & Shuster, 2003

Liker, J., The Toyota Way, McGraw-Hill, 2004