Applying Lean Principle in Manufacturing Sector for Development & Economic Growth

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Competitiveness

[Logos of Apple, Google, P&G, Samsung, Nestle, Coca-Cola, Amazon, Toyota, Tencent, Tata, Jollibee, Alibaba]
Competitiveness
Competitiveness

“It is NOT the Strongest of the species that Survive, NOR the most Intelligent, BUT the one most Responsive to Change.”

Charles Darwin
How Company Compete?

PRICE

Commodity
Products

PRODUCT DIFFERENTIATION

Functionality
Brand
Design
etc.
How Company Compete?

- Operational Excellence
- Customer Intimacy
- Product Leadership
Business Transformation

Adapted from the Smile Curve
Lean Companies

- Nike
- Toyota
- Caterpillar
- Intel
- Kimberly-Clark
- John Deere
- Coca-Cola
- Disney
- FedEx
- Amazon
- American Express
What is Lean?
What is Lean?

“A **systematic approach** to identifying and eliminating non value-added activities through **continuous improvement** by flowing the product at the pull of the customer in **pursuit of perfection**.”
What is Lean?

“Canadian Manufacturers Go Lean!”
What is Lean?

Narrow Definition
- Tools
- Cost cutting

Broad Definition
- System thinking
- Entire enterprise, business system
What is Lean?

- Is about waste elimination in the processes (i.e. work-in-process and finished good inventories).
- Is about expanding capacity by reducing costs and shortening cycle times between order and ship date.
- Is about understanding what is important to the customers.
What is Lean?

• Is about waste elimination in the processes (i.e. work-in-process and finished good inventories).

• Is about expanding capacity by reducing costs and shortening cycle times between order and ship date.

• Is about understanding what is important to the customers.

• Is NOT about eliminating people.
What is Lean?

Five Lean Principles

• **Specify** what does and does not create **value** from the **customer perspective**.

• **Identify** all steps necessary to design, order and produce the product across the whole **value stream** to highlight non value adding waste.

• **Make** those actions that create **value flow** without interruption, detours, backflows, waiting or scrap.

• **Only** make what is **pulled** by the customer.

• **Strive** for **perfection** by continually remove remove waste.
What is Lean?

- Defect
- Overproduction
- Waiting
- Non-utilized people
- Transportation
- Inventory
- Motion
- Extra processing

7+1 Types of Waste (Muda)
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7+1 Types of Waste (Muda)
Why go Lean?

Waste & Non Value Added Activities

Value Add

Total lead time and cost in the value chain

Traditional Improvement

Small saving on time and cost

Lean Improvement

Drastic saving on time and cost

Work Harder

Work Smarter
Why go Lean?

Physical Product Environment
Manufacturing or Logistics

- Value Adding: 5%
- Necessary but Non-Value Adding: 60%
- Non-Value Adding: 35%

Information Environment
Office, Distribution or Retail

- Value Adding: 1%
- Necessary but Non-Value Adding: 49%
- Non-Value Adding: 50%

Legend:
- Green: Value Adding
- Blue: Necessary but Non-Value Adding
- Red: Non-Value Adding
Why go Lean?

How yours look like?
Why go Lean?

What you will not miss?

What the customers will pay for?

How your operations running?

How yours look like?
Why go Lean?

Every Organization must address,

- **Purpose** - To provide value to customers in order to prosper.
- **Process** - Through smooth flowing value streams for design, make and use.
- **People** - By engaging every employee touching the value streams to sustain and improve the flow.

“To do all these is to be Lean.”
Why go Lean?

Tangible benefits of Lean,

- **Reduces Cost.** Waste elimination.
- **Improves quality.** Reduction and elimination of defects.
- **Reduces delivery time.** Process and lead time reduction.
- **Improves customer satisfaction.** More responsive to customer demand.
- **Improves moral and company culture.** Employee involvement in the process.
Why go Lean?

**Company**
- Competitive
- Lower cost
- Higher profit
- Growth

**Employee**
- High morale
- Sense of involvement
- Sense of accomplishment
- Job satisfaction

**Customer**
- Quality product
- Faster response
- Higher service level
- *Cheaper*
Going Lean

What is Lean?
Lean Thinking

What is our goal?
Setting the direction

How we do it?
Understanding the big picture
Detailed mapping
Getting suppliers & customers involved

Will it work?
Check the plan fits the direction & ensure buy-in

Everybody!!!
Going Lean

- Half our current lead time.
- Half our total inventory.
- 100% order fulfillment.
- Double our operating profit.
Use these

- Value Stream Mapping
- Heijunka
- Continuous Flow
- Load Leveling Box
- Kanban/Pull system
- 7 Waste
- Milk run
- Takt time
- 5 Why
- PDCA
- JIT
- 5S
- Pokayoke
- DMAIC
- Supermarket pull
- Pacemaker withdrawal
Lean Manufacturing System

“Produce what customer want when they want it.”
“Remove all waste”

#1 Minimum Inventory
#2 Maximum Efficiency
#3 Minimum Cost
How to go Lean?

- Find a change agent.
- Get the lean knowledge.
- Find a reason to do it.
- Map the value streams.
- Eliminate wastes in the value streams.
- Continuous improvement.
5 steps of Lean Implementation

1. **Specify Value.** Specify what does and does not create value from the customer’s perspective.

2. **Map.** Identify all the steps necessary to design, order and produce the product across the whole value stream to highlight non-value adding waste.

3. **Flow.** Make those actions that create value flow without interruption, detours, backflows, waiting or scrap.

4. **Pull.** Only make what is pulled by the customer.

5. **Perfection.** Strive for perfection by continually removing waste.
General Action Plan

- Find a change agent. *(How about you?)*
- Find a teacher whose learning curve you can borrow. *(Follow the beaten path)*
- Seize (or create) a crisis to motivate action across your firm. *(Crisis is a catalyst for change)*
- Map the entire value stream for all your product families. *(Find the waste)*
- Pick something important and get started. *(Realising the benefits of the change)*
Success Factors

Prepare and Motivate the people
  • Create widespread orientation to continuous improvement.
  • Create common understanding of the need to be lean.

Employee Involvement
  • Push decision making to the “lowest levels”.
  • Train and empowered people.

Share Information and manage expectation.

Identify & Empower Champions
  • Remove roadblocks (people and process)
Questions?