Thinking LEAN

MUSINGS FROM A LEAN THINKER

The Optimist
The Glass is half full.

The Pessimist
The Glass is half empty.

The Lean Thinker
Why is the glass twice as big as it should be?

lean.org/leanpost
Objectives and Expectations

• Start “thinking Lean”
• Better understand Lean methodology
• Utilize Lean concepts to identify and remove waste and enhance customer value
• Understand your role in creating a Lean culture
What is Lean?

Creating more value for customer with fewer resources
History of Lean

- Continuous improvement methodology originated in 1920s
- Refined by Toyota Motor Corporation in early 1960’s

Today, Lean is successfully adopted across all types of organizations and business sectors including higher education.
3 Pillars of Lean

- Increase Value
- Reduce Waste
- Respect People
A Lean culture...

- Begins with a committed leadership
- Encourages team-based problem solving
- Emphasizes communication and teamwork
- Leverages staff talent
- Challenges the status quo
A Lean culture...

• Standardizes processes
• Eliminates tasks that do not add value
• Makes processes as easy as possible for customers and staff
• Focuses on continuous improvement
• Automates repetitive tasks
• Requires metrics and goals
The *Perfect* Process...

- Is completed entirely by one person
- Is completed one at a time *(no batching)*
- Is completed as soon as the request is made
- Is completed without interruption *(flow)*
- Is completed with the information provided
- Is completed correctly *(no defects)*
- Never returns
## Three Types of Process Activities

<table>
<thead>
<tr>
<th>Process Activity</th>
<th>Lean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Value Add Activity</td>
<td>Optimize</td>
</tr>
<tr>
<td>2. Essential Non-Value Add Activity</td>
<td>Minimize</td>
</tr>
<tr>
<td>3. Non-Value Add Activity</td>
<td>Eliminate</td>
</tr>
</tbody>
</table>
In Lean, value is defined from the end user/customer perspective.

Value add activities:

- Address the form, features or functions that the customer desires
- Are “done right the first time” (no rework)
- Directly contribute to customer expectations
Value to the Customer

- **Quality** – meets or exceeds expectations
- **Delivery** – reliable and consistent
- **Cost** – right price or resource investment
Non-Value Add Activities

• Consume resources but create no value for the customer
• Could be stopped and it would be invisible to the end-user or customer

Goal:
To **ELIMINATE** non-value-added activities because they are **WASTE**
Example

Depositing a check into a bank account
Value Add vs. Non-Value Add

Process Steps to Make a Bank Deposit

- Drive to Bank: 10 Min.
- Wait in Line: 5 Min.
- Complete Transaction: 1 Min.
- Drive Home: 10 Min.

Value Add

- Drive to Bank: 10 Min.
- Wait in Line: 5 Min.
- Complete Transaction: 1 Min.
- Drive Home: 10 Min.

Non-Value Add

- Drive to Bank: 10 Min.
- Wait in Line: 5 Min.
- Drive Home: 10 Min.

Value Add

1 Minute
4% of total time

Non-Value Add

25 Minutes
96% of total time
Value-Add vs. Non-value-add

Process Steps to Make a Bank Deposit

Value Add
- Enter Deposit info into smartphone: 30 Seconds
- Take picture of check: 1 Minute
- Complete Transaction: 30 Seconds

Non-Value Add
- Enter Deposit info into smartphone: 30 Seconds
- Take picture of check: 1 Minute
- Complete Transaction: 30 Seconds

Value Add: 1 Minute, 33% of total time
Non-Value Add: 2 Minutes, 66% of total time
Essential Non-Value Add Activities

• Activities that don’t contribute to customer satisfaction that must be done to comply with regulations, organizational policies, etc.

Periodically examine these activities to make sure they are necessary. If not, eliminate them.
ACTIVITY
Directions

• The worksheet has a list of value add, non-value add and essential non-value add administrative activities

• In the next five (5) minutes, individually identify the category in which each activity belongs

• When you’ve completed your individual worksheet, turn it over on the table
Directions

• At each table, identify a facilitator and a scribe
• In the next ten (10) minutes, discuss the individual responses to the worksheet and then, as a group, come to consensus about the correct response for each activity
## Value Add Review

<table>
<thead>
<tr>
<th>Activity</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maintenance of office equipment</td>
<td>1. ENVA</td>
</tr>
<tr>
<td>2. Two-year supply of a form in the filing cabinet</td>
<td>2. NVA</td>
</tr>
<tr>
<td>3. Taking customer orders</td>
<td>3. VA</td>
</tr>
<tr>
<td>4. Re-typing the information</td>
<td>4. NVA</td>
</tr>
</tbody>
</table>
# Value Add Review

<table>
<thead>
<tr>
<th>Activity</th>
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</tr>
</thead>
<tbody>
<tr>
<td>5. Hunting for the correct paper for the copy machine</td>
<td>5. ENVA</td>
</tr>
<tr>
<td>6. Printing a time sheet, then scanning and mailing</td>
<td>6. NVA</td>
</tr>
<tr>
<td>7. Printing the required number of certificates for class participants</td>
<td>7. VA</td>
</tr>
<tr>
<td>8. Maintaining HR records</td>
<td>8. ENVA</td>
</tr>
<tr>
<td>Activity</td>
<td>Type</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>9. Filing a copy of the completed form in two offices</td>
<td>9. NVA</td>
</tr>
<tr>
<td>10. Filling out reports that no one looks at</td>
<td>10. NVA</td>
</tr>
<tr>
<td>11. Ordering business supplies</td>
<td>11. ENVA</td>
</tr>
<tr>
<td>12. Calling to get missing information</td>
<td>12. NVA</td>
</tr>
<tr>
<td>Activity</td>
<td>Type</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
</tr>
<tr>
<td>13. Collecting customer feedback</td>
<td>13. VA</td>
</tr>
<tr>
<td>14. Printing paperwork too soon</td>
<td>14. NVA</td>
</tr>
<tr>
<td>15. Face time with clients/customers</td>
<td>15. VA</td>
</tr>
<tr>
<td>16. Double checking a colleague’s work</td>
<td>16. NVA</td>
</tr>
</tbody>
</table>
## Value Add Review

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>17. Electronically collecting meal orders for an event</td>
<td>17. VA</td>
</tr>
<tr>
<td>18. Preparing compliance reports</td>
<td>18. ENVA</td>
</tr>
<tr>
<td>19. Safety inspection of work environment</td>
<td>19. ENVA</td>
</tr>
<tr>
<td>20. Backing up computer files for data storage</td>
<td>20. NVA</td>
</tr>
</tbody>
</table>
What is Waste?

The elements of an activity that do not add value from the customer perspective
THE 8 WASTES

- Defects
- Overproduction
- Waiting
- Non-Utilized Staff Talent
- Transportation
- Inventory/Storage
- Motion
- Extra Processing
<table>
<thead>
<tr>
<th>D</th>
<th>Defects</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>Overproduction</td>
</tr>
<tr>
<td>W</td>
<td>Waiting</td>
</tr>
<tr>
<td>N</td>
<td>Non-Utilized Talent</td>
</tr>
<tr>
<td>T</td>
<td>Transportation</td>
</tr>
<tr>
<td>I</td>
<td>Inventory</td>
</tr>
<tr>
<td>M</td>
<td>Motion</td>
</tr>
<tr>
<td>E</td>
<td>Extra-Processing</td>
</tr>
</tbody>
</table>
Waste: Defects

Errors - Not doing things right the first time

Examples:
• Data entry errors
• Missing or incomplete information

Solutions:
• Automate forms
• Create standard work flow
• Ensure processes are clear
Waste: Overproduction

Producing more than the customer needs

Examples:
• More attending a meeting than necessary
• Creating reports that no one reads

Solutions:
• Balance work load
• Align processes with customer needs
Waste: Waiting

Time lost when people and/or information are not ready

Examples:
• Approval queues or decisions
• Waiting for customer information

Solutions:
• Eliminate/reduce hand-offs
• Leverage technology
• Clarify processes
Waste: Non-Utilized Staff

Not leveraging peoples’ skills, creativity and talents

Examples:
• Not involving staff in problem solving
• Staff hired to do “x” but doing “y”

Solutions:
• Empower staff to solve problems and think “Lean”
• Engage staff in continuous improvement projects
• Delegate work tasks appropriately
Waste: Transportation

Moving objects from one place to another

Examples:
• Routing documents
• Hand-offs

Solutions:
• Leverage technology
• Analyze data to determine root cause
Waste: Inventory/Storage

Unnecessary storage of information or material

Examples:
• Duplicate copies
• Obsolete databases/files

Solutions:
• First in, first out processing
• Reallocate work during busy times
Waste: Motion

Unnecessary movement of people

Examples:
- Needing multiple clicks to retrieve files
- Searching for files in a messy cabinet

Solutions:
- Organize files and supplies for easy access
- Enhance collaboration & communication
Waste: Extra Processing

Process steps that do not add value for the customer

Examples:
- Excess signature approvals
- Same data required in multiple places on a form

Solutions:
- Delete/automate signature requirements
- Eliminate excess approvals
- Automate forms
ACTIVITY
Directions

• Choose a partner
• Each partner will have a set of flash cards
• One partner will read the activity listed on the card; the other will identify the type of waste the activity reflects
• When you hear the bell, switch roles
Lean Thinking Philosophy

Current State

Identify value-add

Eliminate Waste

Future State

Identify Waste
So far...

- Value add; non-value add; essential non-value add
- Lean’s 8 Wastes
- Current state process mapping
- Removing waste from a process
- Future state process mapping
Searching for files in a file room is what type of waste?

1. Defect
2. Motion
3. Overproduction
4. Transportation
Motion

Unnecessary movement of people
What type of waste is producing reports that no one reads?

1. Inventory/Storage
2. Motion
3. Non-utilizing staff
4. Overproduction
Overproduction

Producing more than the customer needs
What type of waste do I create when I require more approvals than are required by policy?

1. Extra Processing
2. Overproduction
3. Waiting
4. Motion
Extra Processing

Process steps that do not add value for the customer
A Cross Functional Flowchart is unique because of its:

1. Activity shapes
2. Technology
3. Available colors
4. Swim lanes
Swim Lanes

The Way To Do Something

Who Does It 1

START

1. Do this first

4. Do this thing

YES

END

Who Does It 2

2. Do this next

3. Make a Decision

NO

Who Does It 3

5. Do this other thing

6. Then do this
What type of waste is created when a request for approval sits in my manager’s In Box?

1. Inventory/Storage
2. Overproduction
3. Waiting
4. Non-utilized Staff
Waiting

Time lost when people and/or information are not ready
What type of waste is created when a form is missing critical information?

1. Non-utilized Staff
2. Waiting
3. Extra Processing
4. Defect
Defect

Errors – Not doing things right the first time
The diamond shape on a process map represents:

1. A task
2. A decision point
3. A start point
4. An end point
A decision point

- **Start/End Point**: Identifies beginning and end of processes.
- **Task/Process Step**: An activity, begins with an action verb.
- **Decision Point**: Identifies a decision or branch point, answer determines path.
  - Arrows indicate the direction of progression of the process.
What type of waste is created when I keep files from 1999?

1. Inventory/Storage
2. Waiting
3. Extra Processing
4. Defect
Inventory/Storage

Unnecessary storage of information or material
What type of waste is created when I don’t involve employees who do the work in process improvement?

1. Defect
2. Waiting
3. Non-utilized Staff
4. Extra Processing
Non-utilized Staff

Not leveraging peoples’ skills, creativity and talents
A process map includes:

1. Roles and responsibilities
2. Systems
3. Tasks
4. All of the above
All of the above
What type of waste is created when I hand deliver my unit’s invoices to an office off campus?

1. Extra Processing
2. Overproduction
3. Transportation
4. Waiting
Transportation

Moving objects from one place to another
When considering process improvement, what is always the first consideration in a Lean culture?

1. Metrics
2. Reducing the number of steps in the process
3. The customer’s viewpoint
4. Who to involve in a mapping session
One of the Three Pillars of a Lean Culture is:

1. Map processes
2. Get leadership support
3. Respect people
4. Provide technology
Respect People
Finding the Root Cause
5 Whys

• A simple technique to get to the root of a problem
• Asking questions
  – Challenges assumptions
  – Uncovers how much people really know about a process and its inherent outcome(s)
• Not necessarily about asking “why” 5 times, but asking it as many times as needed to get to the real cause of a problem
• Focus is on process
5 Why Example

- Chris takes a lot of pride in her lawn and does all the mowing, fertilizing, edging and raking herself.
- Chris discovered that the family dog had begun digging in the yard, and there were bad patches everywhere.
- Her first thought was that she had to get rid of the dog. How would she explain this to the kids?

- Why did the lawn look bad?
  - The dog was digging it up.
5 Why Example

• Why was the dog digging in the yard?
  – Because she was trying to get at the moles.
• Why were there moles in the yard?
  – Because they like the ready supply of lawn grubs.
• Why are there lawn grubs in my beautiful yard?
  – They are attracted to the new fertilizer.
• Why did I switch to a new fertilizer?
  – I thought it would make my yard look better!

5 Whys saved the dog and the yard.
The client is refusing to pay for the flyers we printed.

- Why?
  - The delivery was late and they couldn’t use the flyers.
- Why?
  - The job took longer than expected.
- Why?
  - We ran out of the right color of printer ink.
- Why?
  - We used the last of the color on a last-minute order.
- Why?
  - We didn’t have enough in stock, and we couldn’t order it in quickly enough.

**Counter-measure:**
Find a supplier who can deliver ink with very short notice.
5 Whys

• Many times teams will stop once a reason for an error or 'defect' has been identified
• These conclusions often do not get to root cause
• A disciplined 5-why approach pushes teams to think outside the box and address the root cause instead of treating the symptoms
Measurement
Why Measure?

• To identify whether we are meeting customer requirements
• To help us understand our processes
• To confirm what we know or reveal what we don’t know
Why Measure?

• To ensure decisions are based on fact, not on emotion
• To show if improvements actually happened
• To reveal problems that bias, emotion and longevity cover up
Effective Measures

- Reflect the customer’s needs as well as our own
- Are important to the business; a basis for decision-making
- Are understandable by both employee and customers
- Are precise in interpreting the results
- Can actually be measured
- Are economical to apply
Data Driven Decisions

• If you hear complaints that a process doesn’t work or is too slow...
  – Gather data to confirm
• If you have difficulty deciding which solution will work best?
  – Test and make decisions based on data
• The only way to show success is through data
• Verify anecdotes and feelings with data!
Measures in Our Environment

• Timeliness
• Costs and/or Revenue
• Error Rate
• Productivity
• Process complexity
• Customer satisfaction
How to apply Lean in your work
Think Lean

- Customer is always the priority
- Identify what adds value for the customer and what doesn’t
- Ask why...5 times
- Identify and remove the waste in processes
- Standardize processes where possible
- Measure
Your Lean unit

• Everyone understands their roles and responsibilities
• Problems are brought out in the open
• The focus is on the process
• Ingenuity is used to ‘improve the system’
• Employees are empowered to solve problems, make improvements
• Communication, teamwork and respect are the norm
What Processes Are Ripe for Lean?

- Take five (5) minutes at your table and fill out the worksheet
  - Identify a process that is ripe for improvement
  - Who would need to be involved in the mapping session?
  - What are some of the types of waste you have observed in the process?
  - What might you measure to show improvement progress?
What Processes Are Ripe for Lean?

- Take five (5) minutes at your table and fill out the worksheet
  - What actions do you commit to take to ensure this process is addressed when you return to the office?
  - Identify a partner at your table that you will follow up with in two weeks to check on your progress.
  - How might you influence leadership to create a Lean culture in your unit?
Lean and You

• Anyone can play a role in Lean process improvement
• In Lean organizations, front line employees are the source of most process improvements
• When you need additional leadership support to improve a process, think of someone who is an effective sponsor of change
Know your role

Communication
Teamwork
Respect

Keep it simple

Focus on process

Make it public
Resources

• Lean Enterprise Institute [www.lean.org](http://www.lean.org)
• Moresteam ‘The Engine Room of Continuous Improvement’ [www.moresteam.com](http://www.moresteam.com)
• Ohio Department of Administrative Services, ‘Lean Ohio’ [www.lean.ohio.gov](http://www.lean.ohio.gov)
• UC Davis Organizational Excellence [www.oe.ucdavis.edu/lean/index.html](http://www.oe.ucdavis.edu/lean/index.html)
THANK YOU!