Seven Wastes

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*Contents included in the presentation are informed by our study of the Toyota Production System
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Workshop Definition

• To give practical help to see waste hiding in plain sight. Waste can appear in several forms and often it looks like useful work!

• In a Lean culture, waste is defined as anything that doesn’t add value to your customer.

How well do you know your wastes?
Agenda

• What is your customer willing to pay for?
• Environmental Conditions of Waste
• 7 Wastes
• Lean Solutions
• Questions
What is your Customer Willing to Pay For?

- Value Add work

- Non Value Add work
  - Necessary
  - Unnecessary
Environmental Conditions of Waste

- Unevenness (*Mura*)
- Overburden (*Muri*)
- Waste (*Muda*)
Unevenness

• Seasonality, market-driven, cyclic fluctuation
Overburden

- Overburden creates a sense of crisis which causes us to protect ourselves
Customers are NOT willing to Pay for Waste

- Does not add value to the product or service
7 Wastes

1. Overproduction
2. Inventory
3. Time/Waiting
4. Transportation
5. Processing
6. Motion
7. Defects

* 7 Wastes as identified by Taiichi Ohno
7 Wastes: Overproduction

- Producing more than your customer is requesting or before they request it

1. Overproduction
2. Inventory
3. Time/Waiting
4. Transportation
5. Processing
6. Motion
7. Defects
7 Wastes: Inventory

- More materials or information than is required

1. Overproduction
2. Inventory
3. Time/Waiting
4. Transportation
5. Processing
6. Motion
7. Defects
7 Wastes: Time/Waiting

- Waiting done by customers or by employees

1. Overproduction
2. Inventory
3. Time/Waiting
4. Transportation
5. Processing
6. Motion
7. Defects
7 Wastes: Transportation

• Unnecessary conveyance of products, from one location to another, or handoff from one employee to another

1. Overproduction
2. Inventory
3. Time/Waiting
4. Transportation
5. Processing
6. Motion
7. Defects
7 Wastes: Processing

- Unnecessary manual work that does not contribute value to the product

1. Overproduction
2. Inventory
3. Time/Waiting
4. Transportation
5. Processing
6. Motion
7. Defects
7 Wastes: Motion

- Unnecessary physical or mental motion often associated with searching

1. Overproduction
2. Inventory
3. Time/Waiting
4. Transportation
5. Processing
6. Motion
7. Defects
7 Wastes: Defects

- A mistake which reaches the customer

1. Overproduction
2. Inventory
3. Time/Waiting
4. Transportation
5. Processing
6. Motion
7. Defects
7 Types of Waste

1. Overproduction
2. Inventory
3. Time/Waiting
4. Transportation
5. Processing
6. Motion
7. Defects

* 7 Wastes as identified by Taiichi Ohno
Lean Solutions

Premera Production System
Deliver Only What Customers Value

**Just-in-time**
Operate with the minimum resources required to consistently deliver:

- **Just** what is needed
- **In just** the required amount
- **Just where** it is needed
- **Just when** it is needed

**Objectives**
Appropriate and efficient use of people's talent

**Methods**
- Standard Work Sequence
- Standard Work In Process
- Alarm (Andon) Autonomous Maintenance

**Principles**
- **Pace** (Takt Time) Production
- One-piece flow
- Pull System

**Automation (Jidoka)**
- One-by-one confirmation of quality
- Stop and respond to every defect
- Separate machine work from human work
- Enable machines to detect defects and stop automatically

**Level Production (Heijunka)**

**Continuous Elimination of Waste (Muda)**
Visual Management reveals waste and inconsistent or unexpected results
Problem Solving removes waste and helps restore consistency

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Lean Solutions

- First you must see it – **MAKE IT VISIBLE!**
You can **See** and **Identify Waste** as you connect your processes from start to finish.

**Verses a Silo Approach**
Lean Solutions

- Problem Solve

Plan  Do
Act  Check
Lean Solutions

• Keep watching
Challenge

- Do you reward firefighting?
- Do you wait until there’s time-pressure to plan?