Fall 2018
Innovation Champion
Class 4

September 27, 2018

Modules to Cover

• Root Cause Analysis

• Tools for Reducing Errors

• Identifying, Selecting & Testing Improvements
**DMAIC**

**Define**
- Define your customer
- Define your defect (how are you failing to meet customer expectations?)
- Define project scope and objectives (how much do you expect to improve?)

**Measure**
- Measure current state
- Measure current processes
- Collect data or review existing data

**Analyze**
- Analyze data collected for insights
- Identify root causes or defects

**Improve**
- Brainstorm solutions to eliminate root causes
- Test solutions in small pilots
- Evaluate various solutions and determine which is sustainable

**Control**
- Full scale implementation of selected improvements
- Training on changed procedures & policies
- Share information and lessons learned

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**Root Cause(s)**

The most **basic** factor(s) that:

1. lead to the problem; AND

2. when fixed will **prevent** or significantly reduce the likelihood of the problem **recurring**.

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**Root Causes – General to specific**

- **General** – brainstorming
  - Affinity Diagram

- **Focus** – categories of causes & some specifics
  - Cause & Effect Matrix
  - Fishbone Diagram

- **Specific** – roots within cause categories
  - Current Reality Tree
  - 5 Whys
**Practice Example**

**Problem:** Grievances filed by employees who are not selected for a vacant position at the City of Tulsa.

**Fishbone Diagram**

**5 Whys**

Why?  
Why?  
Why?  
Why?  
Why?
Span of Control vs. Sphere of Influence

Reducing Errors
- Setting targets & measuring
- Standard Work
- Error Proofing (Poka Yoke)
- 5S
- Workplace Design & Layout
- Kanban

Innovation
Think through a terrible idea

Six Thinking Hats

Managing  Emotions  Information

Logic  Optimism  Creativity

Identifying Solutions

Idea Sprint Exercise
Identifying, Selecting and Testing Improvements

- Prioritizing potential improvements
- Low cost evaluations
- Assessing & Mitigating Risks

Prioritizing Potential Improvements – Selection Matrix

<table>
<thead>
<tr>
<th>Criteria Selection Worksheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Priority</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

- **Safety Score**
  - 1 = Low, 2 = Medium, 3 = High
- **Risk**
  - 1 = Low, 2 = Medium, 3 = High
- **Impact**
  - 1 = Low, 2 = Medium, 3 = High
- **Feasibility**
  - 1 = High, 2 = Medium, 3 = Low
### Selection Matrix

#### Criteria Selection Worksheet

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Rating</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A high safety culture</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>2. Staffing flexibility</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3. Knowledge of office occupancy</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>4. Initial building and HVAC systems</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>5. Initial building and HVAC systems</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

#### What program do we do this? (Tulsa)

- **Healthcare Program**
  - Start date: [Date]
  - End date: [Date]
  - Program description: [Description]

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FMEA

Step-by-step approach to identify all possible failures in a design, manufacturing, or assembly process or a product or service.

Standard Work

Documents best practice for performing a task or process and ensures that all work is done according to current best practices.