A Case Study: Applying a Lean Management System to the Central Research Administration Office

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Facilitation, LEAN
SECTION 01

Introductions & Objectives
Learning Objectives

Lean
Describe Lean as a methodology for process and performance improvement

Visual Management
Explain the power and purpose of visual management (along with other tools and behaviors) in a Lean management system

Ideas and Tools
Take away some ideas and tools to support participants in the initiation of process improvement work
SECTION 01

Background
The Current State, Then
Reason for Action

Problem Statement:

• Management is reactive with very few insights into daily processes

Desired Outcomes:

• Guidelines that are reliably followed
• Standard work that is adhered to
• Continued high employee engagement / morale
SECTION 02

Lean Overview
What Is Lean?

Lean is a systematic approach of continuous improvement that uses a combination of principles and tools.

At the core of a lean approach to managing a business and solving problems is an intense focus on providing value to customers.
Tennis Ball Activity

• No one is to touch the tennis ball more than once or simultaneously.
• The same order must be followed.
• There must be no drops (defects).
• The tennis ball must pass through everyone’s hands.
4 Rules In Use
1. **Activities**: Work must be pre-specified as to content, sequence, timing, location and expected outcome.

2. **Connections**: between customers and suppliers must be pre-specified, direct, binary (yes/no) & unambiguous.

3. **Pathway**: Simple and direct & no loops or forks.

4. **Improvement**: Closest to the Problem, Using the Scientific Method (experiment), By Those Doing the Work, Supported by a Coach
   
   Constantly Striving Toward The Ideal

Adapted from “Decoding the DNA of the Toyota Production System” Bowen/Spear, HBR 1999
A systematic approach to managing operational, improvement and incoming work using highly specified behaviors and methods.
Focus: Identifying Where to Start

Activities (funds or accounts) taking too long to route and be setup.

- Effort Templates submitted late (awaiting last minute setups)
- Too many “recertifications” because Activities were not set up timely.

Why focus on this process above others?
#1 area of customer complaints!
SECTION 03
A3 Thinking
A3 Thinking

Uses a well-defined framework to move the thinker(s) from...

- Initial Perception of the Problem
- Analysis of the Current State
- Definition of Target State
- Action Planning and Measurement
Title: Key Questions to Ask When Working Through an A3

**Problem (Reason for Action)**
  - What is not working?
  - Why are we here meeting?
  - Why isn't happy and why?

**Background/Measurement**
- How broken is it?
- How do we know it's broken?
- Baseline/targets for measures
- Show it isn't working
- Why do we need/want to focus on this problem?
- What does "not meeting target/demand" mean?
- Define the actual waste from the problem statement

**Current State**
- Show me where the issues are
- Show me what is looks like NOW - before improvements
- Not what it is supposed to look like but how the process actually unfolds

**Root Cause Analysis**
- Show me WHY
- Root cause is typically the hardest part usually comes out of conversations within the group as opposed to a specific root cause exercise

**Countermeasure(s)**
- What can we CHANGE/FIX to get to TARGET STATE?
- Should be a direct connection to root cause
- Try to focus on a couple main things to improve, too many gets overwhelming

**Rapid Experiment(s)**
- Let's try it! Plan out experiment in detail (who, what, when, where, what do we want to learn, how will we know it worked, etc)

**Completion Plan**
- Specific steps to make countermeasures happen
- How do we get these improvements working?
- Carry over naming convention from countermeasures to know what steps go with what

**Expected outcome of countermeasuer/action**

**Benefit / Waste Elimination**
- Is it worth the effort?
- How do we know?
- What metrics do we have?

**Follow up / Confirmed State**
- This is most important use specific in. Example
- 10/2/22: 1-2: Checks in on status of action items
- 10/2: Experiment kick-off

**Outcome**

**What will this look like after improvements?**

**What big ideas do we have to get us to the Target State?**

**What can we just do/try?**

**What do we need to do to accomplish our target state?**

**How will we know that we have been successful?**
Questions for Staff at (one hour) inter-departmental staff meeting:
• What are the process breakdowns or issues that lead to setup delays?
• What are realistic improvement goals (KPIs)?
• How do we measure success with data?

Defined problem based on customer complaints, but no baseline data.
## Lean tool: 8 Wastes (DOWNTIME)

<table>
<thead>
<tr>
<th>No.</th>
<th>Waste</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Defects</td>
<td>Work that contains error, rework, or lacks something</td>
</tr>
<tr>
<td>02</td>
<td>Over-Prod</td>
<td>Producing more than the customer/patient needs right now</td>
</tr>
<tr>
<td>03</td>
<td>Waiting</td>
<td>Idle time creating when material, people, information, or equipment is not ready</td>
</tr>
<tr>
<td>04</td>
<td>Not Clear</td>
<td>People doing work are not confident about best way to perform task</td>
</tr>
<tr>
<td>05</td>
<td>Transporting</td>
<td>Transporting of patient or item that does not add value</td>
</tr>
<tr>
<td>06</td>
<td>Inventory</td>
<td>More materials/products on-hand than required to do the work</td>
</tr>
<tr>
<td>07</td>
<td>Motion</td>
<td>Movement that does not add value</td>
</tr>
<tr>
<td>08</td>
<td>Excess Proc</td>
<td>Extra effort or activities that add no value from the patient perspective</td>
</tr>
</tbody>
</table>
Engaging Front Line Staff In a Waste Walk

**SPARO Lawson Macro Process — team consensus 4/25/17**

### Just Do Its:
1. Eliminate troublesome folder
2. Shut down neglected email account; redirect inquiries
3. Document Standard Work processes
4. Create detailed process map
5. Pull and track data

### Counter Measures:
1. Monthly projects ending reports
2. Cross-train backups
3. Redundancy for processes outside dept.

**KPI #1**: Activities begin routing 45 days in advance of project start date

**KPI #2**: Activity Routing completed in 8 days
SECTION 04
Key Performance Indicators
Defining Key Performance Indicators (KPIs)

A KPI is a measurement that strongly supports and facilitates achieving a critical goal of the organization. KPIs can be viewed from two perspectives: the Lean perspective of eliminating waste, and the corporate perspective of achieving strategic goals. These two perspectives are closely related.
Establishing Key Performance Indicators (KPIs)

What’s the end goal?

- Improve Routing & Setup Times
- Increase % of Effort Templates received on time
- Decrease Activity Not Setup “Recerts”

Satisfied Customers
Creating a Scorecard

### SPARO Scorecard - October 2018

<table>
<thead>
<tr>
<th>Metrics</th>
<th>Metric Definition</th>
<th>Frequency</th>
<th>VMB SPA</th>
<th>Last Update</th>
<th>Last Score</th>
<th>Target</th>
<th>YTD</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applications</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of proposals submitted to sponsor on time</td>
<td>proposals submitted on or in advance of sponsor-indicated deadline [Source: Cayuse]</td>
<td>Monthly</td>
<td>AB</td>
<td>11/1/2018</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Average SPARO Cayuse Proposal Review Turnaround</td>
<td>average of # of business days a SP record is in SPARO in Process/SPARO Director Approval status [Source: Cayuse]</td>
<td>Monthly</td>
<td>DW</td>
<td>11/5/2018</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td># of people who have completed Research Compliance Training</td>
<td>Completed Status [Source: Cornerstone Reports: (\text{Completed} \times \text{Unlocked}) / (\text{Unassigned} + \text{Assigned}) / (\text{In Progress}) / (\text{Completed})]</td>
<td>Monthly</td>
<td>RK</td>
<td>11/1/2018</td>
<td>14</td>
<td>15</td>
<td>471</td>
<td>417</td>
</tr>
<tr>
<td>% of people who attended trainings offered on finding funding/applications/CRA/Pivot Training</td>
<td>people who attended cornerstone [Source: Training/Office Hour sign in sheets]</td>
<td>Monthly</td>
<td>RK</td>
<td>11/1/2018</td>
<td>0</td>
<td>2</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td># of COMIIB ONLY applications reviewed</td>
<td>people who attended cornerstone [Source: Training/Office Hour sign in sheets]</td>
<td>Monthly</td>
<td>AB</td>
<td>11/1/2018</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>12</td>
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<tr>
<td>COMIIB Only Turnaround</td>
<td>average of # of business days a COMIIB ONLY SP record is in SPARO in Process/SPARO</td>
<td>Monthly</td>
<td>DW</td>
<td>11/5/2018</td>
<td>5</td>
<td>14</td>
<td>3</td>
<td>8.87</td>
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<td><strong>Award Management</strong></td>
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<td></td>
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</tr>
<tr>
<td>% of Activities routed 45 days in advance of Contract Start date</td>
<td>business days SPARO Analyst routed Activity Setup Form in comparison to contract start date [Source: Activity Routing Forms]</td>
<td>Monthly</td>
<td>AB</td>
<td>11/5/2018</td>
<td>22%</td>
<td>30%</td>
<td>11%</td>
<td>20%</td>
</tr>
<tr>
<td>Activity Supervision Turnaround time</td>
<td>business days from Grant Accounting review to Supervisor upload date. YTD is average of all months this FY. [Source: Activity Routing Forms]</td>
<td>Monthly</td>
<td>AB</td>
<td>11/5/2018</td>
<td>5</td>
<td>4</td>
<td>12</td>
<td>4</td>
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<tr>
<td># of people who attended trainings on grant management topics (IRB Effort)</td>
<td>people who attended cornerstone [Source: Training/Office Hour sign in sheets: Cornerstone]</td>
<td>Monthly</td>
<td>KF</td>
<td>11/6/2018</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>10</td>
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<td><strong>Clinical Trial Services</strong></td>
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<td></td>
</tr>
<tr>
<td>CDA Turnaround Time</td>
<td>days - receipt of CDA to execution. YTD is average of months this FY. [Source: SPARO Contract Tracker]</td>
<td>Monthly</td>
<td>ET</td>
<td>11/5/2018</td>
<td>3</td>
<td>10</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>CTA Turnaround Time</td>
<td>days - receipt of CTA to execution [Source: SPARO Contract Tracker]</td>
<td>Monthly</td>
<td>ET</td>
<td>11/5/2018</td>
<td>56</td>
<td>60</td>
<td>68</td>
<td>60</td>
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<tr>
<td># of people who attended trainings on CT-related issues (research billing compliance, GCPs, FDA Readiness, human subjects protections)</td>
<td>people who attended trainings [Source: Training/Office Hour sign in sheets: Cornerstone]</td>
<td>Monthly</td>
<td>KF</td>
<td>11/2/2018</td>
<td>0</td>
<td>2</td>
<td>24</td>
<td>20</td>
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<tr>
<td><strong>Contracts</strong></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>SPARO Contract Turnaround</td>
<td>Average contract turnround time for SPARO executed contracts. Received date to FTE date in Days [Source: SPARO Contract Tracker]</td>
<td>Monthly</td>
<td>ET</td>
<td>11/5/2018</td>
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<td>35</td>
<td>30.18</td>
<td>35</td>
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<td>UCD Contract Turnaround</td>
<td>Average contract turnround time for UCD executed contracts. Received date to FTE date in Days [Source: SPARO Contract Tracker]</td>
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<td>ET</td>
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<td>37.79</td>
<td>35</td>
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<td>SPARO contracts outstanding &gt; 50 days</td>
<td>% of current active SPARO contracts outstanding for 50+ days [Source: SPARO Contract Tracker]. YTD is cumulative average</td>
<td>Monthly</td>
<td>ET</td>
<td>11/5/2018</td>
<td>32%</td>
<td>30%</td>
<td>34%</td>
<td>30%</td>
</tr>
<tr>
<td>SPARO contracts outstanding &gt; 90 days</td>
<td>% of current active SPARO contracts outstanding for 90+ days [Source: SPARO Contract Tracker]. YTD is cumulative average</td>
<td>Monthly</td>
<td>ET</td>
<td>11/5/2018</td>
<td>17%</td>
<td>25%</td>
<td>23%</td>
<td>25%</td>
</tr>
<tr>
<td># of people who attended trainings offered on contracts (data usage mechanisms)</td>
<td>people who attended trainings [Source: Training/Office Hour sign in sheets: Cornerstone]</td>
<td>Monthly</td>
<td>RK</td>
<td>11/1/2018</td>
<td>0</td>
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SECTION 04

Visual Management
Visual Management Board
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<td>12</td>
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<td>Monthly</td>
<td>AB</td>
<td>11/5/2018</td>
<td>22%</td>
<td>75%</td>
<td>11%</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td>Activity Supervisor Turnaround time [Source: Grant Accounting review to Supervisor upload date]</td>
<td>Monthly</td>
<td>AB</td>
<td>11/5/2018</td>
<td>5</td>
<td>4</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>SPARO contracts outstanding &gt; 60 days [Source: SPARO Contract Tracker]</td>
<td>Monthly</td>
<td>ET</td>
<td>11/5/2018</td>
<td>32%</td>
<td>30%</td>
<td>34%</td>
<td>30%</td>
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<td></td>
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<td>11/1/2018</td>
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</tbody>
</table>
SECTION 05

Standard Work
Standard Work

• The Role of Standard Work in Improvement

• Standard work is a clear, concise, and **written** description of how to perform a particular process or task so that the outcome will be safe, efficient, and of the highest quality
• Standard work represents the best practice known at a point in time
Standard Work & Leader Standard Work

I. Purpose
This document is designed to be the current best practice for the routing and setup of Activities in Lawson. It will set expectations for how to do the work.

II. Background/Scope/Responsibility
This standard work is for SPARO and Grant Accounting.

III. Procedure

1) **Continuation Projects:** The Lawson Super User will be responsible for pulling the Activity Ending Report for Grant Analysts the first week of every month. Grant Analysts are expected to review the report, provide responses in the Excel file, and route any new Activity setups by the following Friday. The expectation is that Activity setups for ongoing projects will be routed at least 45 days prior to the start of the new budget period.

   The report is saved here: T:\PHI\SPARO\Activities\Reports\Grants Ending

   **New Projects:** The Grant Analyst should normally route Activity setups for new projects at least 45 days prior to the start of the award. Exceptions to this expectation include:
   - a. State contracts that are not fully executed until the State Controller signs the agreement. These should not be routed for Activity setup until we have confirmation from the State that the agreement will be fully executed by the start date listed on the contract.
   - b. When SPARO does not receive at least 45 day advance notice of a new project or award. These should be routed upon receipt of notification / enough pertinent information to complete an activity setup.

2) The Grant Analyst is responsible for initiating the Activity Setup form, following the instructions that are included on the form as comments and notes. The Grant Analyst is responsible for the Face Sheet, GM04.1 (All known progress and financial deliverables) and AC20.1 (Budget) tabs. The Activity Setup form can be accessed here: T:\PHI\SPARO\Activity Routing\Activity Forms Template.

   Once completed, the Grant Analyst should type their name and the date of completion at the bottom of the Face Sheet tab in the space provided.
SECTION 06

The Current State, Now
Outcomes

**KPI:** Activities begin routing 45 days in advance of project start date

![Graph showing % of Continuations Routed 45 Days Prior to Begin Date]

- **Graph Title:** % of Continuations Routed 45 Days Prior to Begin Date
- **X-axis:** Month/Year
- **Y-axis:** % started 45 days early
- **Legend:**
  - Blue line: Continuations started 45 days prior (excludes State & CT)
  - Red line: Goal: 30% improvement
**Outcomes**

**KPI: Activity Routing completed in 8 days**

*Activity Setup Turnaround Time*

Customer Complaints eliminated!
Lessons Learned

1. Order a magnetic white board!
2. Learn from front line staff.
4. Set aside and dedicate adequate time to monitor and analyze data.
5. Don’t do it all on your own.
6. It’s not one and done, but a cycle of continuous/incremental improvement.
**Successes**

1. Focus on process, not people.
2. Power of visual management for accountability and transparency. Color code!
3. GEMBA - creating the space for continual process improvement discussion.

*A bad system will beat a good person every time.*  
- W.E. Deming
Contact Us with Questions

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