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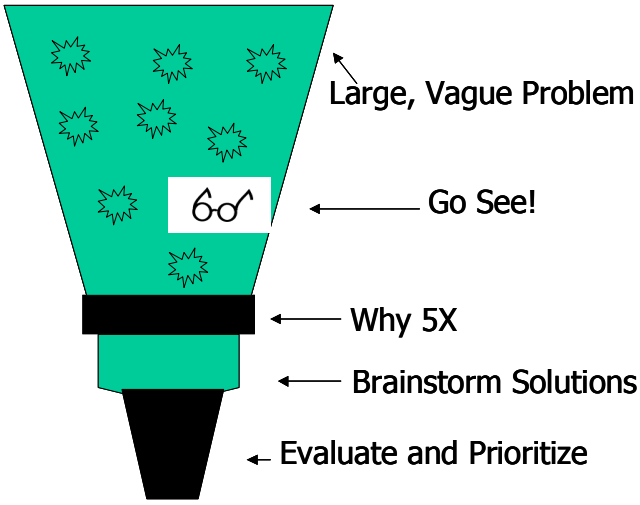
Excerpt from Lesson 4

Problem Solving



The Problem Funnel

"When a problem arises, if our search for the cause is not thorough the actions taken can be out of focus."

-- Taiichi Ohno

A central tenet of e^2 is problem solving. Success with e^2 relies on everyone in the business becoming skilled at identifying and solving problems. In the e^2 Foundations booklet we learned about the importance of the scientific method, that using the structure of the PDCA process to rigorously observe, measure, understand and experiment to improve upon the current condition and move in the direction of True North is a prerequisite for an effective Continuous Improvement System. People must be taught how to find and change the time anchors in their processes, those things that increase the time between paying and getting paid, and problem solving is the skill that must be learned and applied to accelerate these efforts.

As a countermeasure, problem solving is aimed at providing our local scientists, our thinking people, with a proven method and set of tools that will assist in exposing problems and their causes, and stimulate ideas for improvements. Over time and with practice an organization is able to create a population of problem solvers. The bottom line is we need all eyes in the organization looking for and addressing problems. We need to expose and attack them, and we need to fix them one by one. But how do we do this and how do we provide opportunities for people to practice regularly?

Let's begin by examining the problem funnel shown on page 24. It is important to understand that our business is fraught with many small problems that waste time, get in the way of work, and disrupt material and information flow on a daily basis. Many of

these problems may be hard to see, may occur at irregular intervals, may be discovered far from the point where the problems arose, or perhaps no feedback about the problem is reaching the areas responsible. The point is that often problems encountered at work seem vague and, perhaps, overwhelming to the people affected by them. In some cases the problems may be so chronic that workers have given up reporting them and many may even assume these habitual frustrations will never be fixed!

The e^2 approach to problem solving begins with a firm belief that when a problem is exposed, it must be embraced and solved immediately. When this happens the message to workers is very positive and more problems are likely to be exposed.

However, since problems can seem vexing and overwhelming, we have to start the process by finding a way to break them down into well-defined, addressable issues. Remember that old saying, "You have to eat the elephant one bite at a time"? Well, think of problem solving the same way.

Not surprisingly then, the first step in the problem solving process is direct observation. When problems are large or vague, much can be learned and details and sub-components of a problem can be identified when time is spent learning "the facts" about a problem. **This must be done in the area(s) where the problem is felt or created, and from the people who operate the processes that contribute to or experience the problem**. Watch, listen, ask questions, record facts and gather data. Masaaki Imai, in his book *Gemba Kaizen*[1], reminds us to "Go to Gemba" (the real place) whenever abnormality occurs or whenever one needs to understand the true condition, because Gemba is the source of ALL information.

During this problem investigation phase, people are trying to really grasp the current situation. Some good questions to explore are:

1. How does the current situation compare to any standards that exist for this process? Another way to think about this is to ask, "Is what is actually happening what is supposed to happen?"

2. How does the current condition compare to the ideal situation?

3. Which of the 4M's (man, material, machine, method) is contributing to or affected by the problem? What facts can be gathered related to these resources and the problem?

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[1] Masaaki Imai, *Gemba Kaizen: A Commonsense, Low-Cost Approach to Management* (New York: McGraw-Hill, 1997), 24.

Excerpt: Practice Exercise Lesson 4

Practice Exercise: Do exercise 1 below and also do either exercise 2 or 3 to increase your understanding of problem solving.

1. Pick a recurring problem to study within your own work environment and spend 2-4 hours investigating it. Use the materials in this lesson to assist you. What can you directly observe about the problem or its symptoms? How does what is happening compare to what is supposed to happen (the standard) or to what should ideally be happening? What data can you gather about the problem? How often does it happen, under what circumstances? Talk to the people who found the problem to learn what they know about it. Examine any samples or examples of the problem closely. Look at the documentation that is associated with the process where the problem is created and see if it could be contributing (e.g. drawings, work instructions, procedures, planning documents, etc.). Use 5Why Thinking to see if you can discover the root cause of problem.

For more information or to order the e^2 Continuous Improvement System, please visit:
www.gbmp.org

or

Contact:

Mr. Christopher Martin
Vice President
GBMP, Inc.
100 Morrissey Boulevard, M5-209
Boston, MA 02125
(617) 287-7648
cmartin@gbmp.org