

Category Review: Cause Questions

As a guide to explaining the world around us, we are sometimes given this advice: ask the question “Why?” five times. From the PQ perspective, that’s like advising the confused student to ask “Huh?” or “What do you mean?” five times in order to clarify a meaning. It’s too imprecise to be efficient. Instead of asking the same vague question over and over, let’s learn how to ask the question “Why?” four precise ways.

The “Why” of Trigger Events

When we ask “Why?” sometimes we are looking for “sparks,” or trigger events.

Q. Why is the project suddenly two weeks behind?

A. There was an accident last week at the Manila plant.

For this form of explanation to be complete, we often need to identify background conditions or contributing factors that explain how the “spark” becomes a maelstrom.

Q. Why did the stock market suddenly drop?

A. The trigger event was a low earnings report from a major corporation. In the background, three conditions had been quietly simmering for several weeks: doubts about consumer confidence, high consumer debt, and fear that oil prices could rise.

The “Why” of Mechanism

Sometimes our “Why?” is actually a different question in disguise. What we really want to know is “How does it work?”

Q. Why is a weak dollar good for our company?

A. Here’s how it works. As you know, Europe is our largest market. Suppose that one of our products sells for \$1000 here in the United States. Let’s assume that \$100 is the equivalent of €80. This means that Europeans buy the same product for €800, more or less. Now imagine that the dollar suddenly becomes weaker against the euro, making \$100 worth only €70. This is *bad* news if you’re going to Europe on vacation, but for our company it’s *good* news. Now we can sell the same product for only €700 and still earn the same profit. With this kind of leverage, we can continue to make money and, at the same time, gain market share against our European competitors. That’s how a weaker dollar helps a company like ours.

The “Why” of Drivers and Inhibitors

When our goal is not just to explain the past but also to predict the future, it can be very helpful to model the world in terms of sets of forces that are working in opposite directions: drivers and inhibitors, pushes and pulls.

An Imprecise Question: Why are our costs rising?

Some Precise Questions: What are our cost drivers?

What mechanisms do we have in place for controlling costs?

Are most of the changes taking place on the side of the drivers, or are they on the side of the inhibitors?

The “Why” of Root Causes

The term “root cause” is used loosely these days. As we define it, a root cause is a factor that *can be brought under control* and that *has the potential to eliminate or prevent a problem*.

In the work place, root causes are typically found in an organization’s infrastructure: processes, tools, specs, policies, training, hiring.

Suppose that an equipment operator makes an error that ends up shutting down an entire manufacturing line. Obvious causal factors might include poor training, poor lighting, and instructions that were poorly written. But are these *root* causes? Not unless controlling them would, by itself, be sufficient to *prevent* the error from recurring. If fixing these three conditions merely reduces the likelihood of a recurrence, then these are garden variety causes. When we look beneath these surface causes, perhaps we will discover a true root cause: poorly designed work flow, mismanagement, or misplaced organizational priorities.

The main reason for doing root cause analysis is that, when faced with a problem, it helps us choose between two very different pathways. On the one hand we can attempt to solve the problem with a *root cause fix*. On the other hand we can simply try to *contain* it. Doing a root cause fix means solving a problem in a way that blocks a recurrence (or prevents a first occurrence). Containing a problem means deciding to use our limited resources in a way that reduces the problem to an acceptable level. Having an accurate analysis of root causes is the basis for deciding between containment and a root cause fix.

Exercise: Perform a root cause analysis of a problem in your work

<p>What is the problem?</p>	
<p>What are some surface causes?</p>	
<p>What might be a root cause? Focus on factors in the surrounding infrastructure.</p>	
<p>Is controlling this factor feasible? If not, set it aside and look for another possible root cause.</p>	
<p>Would controlling this factor make it possible to eliminate the problem? If not, set it aside and look for another possible root cause.</p>	
<p>From a business perspective, which is better: to eliminate the problem or to contain it? Why?</p>	
<p>If your goal is containment, for what level should you aim?</p>	