Business Automation Specialists of Minnesota, Inc.™

Lessons Learned from "The Toyota Way"

The BASM team has been reading and discussing The Toyota Way for the last several months. Interestingly, the reason Toyota is having problems currently is that they didn't follow their own processes. It's a tough, but valuable lesson to learn.

We have been particularly intrigued by the "Five Whys" technique as a method of continuous improvement. One technique that is part of continuous improvement, is to ask why a problem exists, five times; going to a deeper level with each 'Why?' to get to the root cause of the problem.

This story illustrates the results of using this technique. Toyota entrusted engineer Ichiro Suzuki with the task of creating Toyota's first luxury vehicle, which eventually became the Lexus. Suzuki wanted all of the characteristics of a high-end, luxury vehicle without the compromises automotive engineering said were necessary to achieve those characteristics. For example, assumptions of the day were that a high-performance engine required a higher mass car in order to dampen the engine noise. Suzuki wanted to improve fuel efficiency, which required a lower mass car. He did not want to compromise on speed, noise or fuel efficiency. These goals were seemingly at odds with one another. Using the "Five-Why" analysis, Suzuki realized that the engine noise problem could be resolved by building the engine with tighter engineering tolerances. Of course, that lead to another set of "Five-Whys", as conventional wisdom said that mass production techniques could not produce an engine with the tighter tolerances required to eliminate noise.

Using the "Five-Why" analysis, Suzuki successfully overcame the engineering challenges of the day to produce a vehicle that sold 2.7 times more than Mercedes-Benz 300E, 420SE, and 560SEL combined in the first year.

Have you found yourself solving the wrong problem? (Like adding mass to the car to reduce the noise you hear, instead of reducing engine vibration to actually eliminate noise?) We have been asked to do that many times. In fact, sometimes, we find ourselves doing it on our own issues. The challenge is that solving the wrong problem may only disguise the original issue and create another problem (lower gas mileage, in this example.)

Going back to Suzuki and the Lexus—while this retelling does not give proper weight to the time and energy expended to develop the Lexus, it points out that using this technique can have big payoffs. What you are really looking for is the cause and effect relationships underlying the particular problem. You are looking for the root cause or causes of a defect or problem. We all have plenty to do, so let's talk about some reasons we don't get to the root cause(s). This list is not exhaustive, but you get the idea.

- It is easy to stop at the first obvious symptom rather than digging deeper (too busy).
- Perhaps we don't know enough to dig any deeper (need more training).
- No one else is interested in helping solve the problem (lack of team involvement).
- You cannot consistently repeat the problem (different people using different methods – no standardization of procedures; different quality standards for components).
- Perhaps you stop at one issue, when in fact, there are two or more causes for the problem (taking the first answer is not always the right or only answer).

Let's look at an example of solving a late delivery to a customer. You have a very important customer who has just called to say that your delivery of their very important order was late by several days. Your customer is irate because it cost them a lot of money to deal with the delay; your warehouse is defensive; the salesperson is going ballistic and the boss – well, you decide. So, how do you get to the root cause?

- Start by calling your team together. This need not be an official, long-lasting committee – but it must include the people who are involved in the problem. They all need to be in the room. Who are they? Well, start with warehouse, sales, customer service, purchasing, credit department and anyone else who touched the order.
- Don't wait; hold the meeting right away while the problem is fresh in everyone's thinking. Many times, the problem hides in the tiny details that get lost as time passes.
- Decide who will run the meeting. The leader need not be a manager but everyone must understand that this person is responsible to facilitate the meeting/s (this helps you grow your team members).
- Write down the specific problem you are trying to solve. Describe it completely. (Not our delivery was late, but, we missed the deadline by ten days.) This makes sure that everyone is working on the same problem and

helps to focus everyone's attention. Get agreement that this is the problem. This may take some time. Invest it to get the best solution(s).

- Ask the first Why? Write down the answer to the problem under the problem description (We submitted our purchase order too late to arrive on time). Most likely you are not at the real cause yet.
- Ask Why? again (The Sales Order was entered late, twelve days after it was received).
- Ask the next, Why? Write down the next answer (The credit department didn't approve the order for ten days).
- Ask the next, Why? (When we received the customer's purchase order, the salesperson was out of town on vacation. No one else knew the specifics of the order. No one called the salesperson until he was back in town five days later.)
- Ask the 5th Why? (The salesperson is responsible for all orders from their customers).
- Keep at it until you have gotten to the root cause (you cannot get to any more Whys?).

Maybe you are stuck. Here are a couple of tips to move closer to the root cause. Determine if there is more than one cause at each level; or you may resolve one cause and still have the problem. Is there anything concrete that validates that this is a cause? Can you measure it? Do you have any proof that this really is causing the problem or are you just assuming it causes the problem? Invite in someone not involved in the problem. Sometimes it helps to have an outsider listen in because he or she is not mired in the details of the problems or invested in current procedures or methods.

Once you have gotten several levels deep, you are getting closer. Now is the time to look at the causes to make sure you are on the right track. Are all the causes technical or are there some human-caused problems? Are there causes pointing to communication issues or training needs? Problems are rarely limited to technical issues. People problems are typically involved at several levels of the process.

Here are a couple of important rules for your problem-solving meeting (and consider these, not only during this exercise, but also as a daily practice):

- Set the ground rules up front. Have everyone bring a yellow pad – use this to jot ideas, especially while others are talking, so you do not forget.
- Don't play "Pin the Blame on Someone." This is not about blame, it is about solving problems.
- Don't protect your territory. It is critical that all players focus on solving the problem, rather than playing defense.
- Don't criticize. Obviously, if people are afraid to tell the truth for fear they will be criticized, disciplined or belittled, they will not participate.
- Remember, the people who do the work every day typically have a good idea of how to solve the problem. When they are involved in the solution, they own the solution. You don't have to sell it. Self-management is the best management.
- Encourage brainstorming.
- Show common courtesy. Don't interrupt others. You may want to consider having a "talking horse," especially if your team members keep interrupting. Only the person with the "talking horse" can talk. When they pass the "horse," someone else begins talking. Everyone else has to listen.
- While you are listening, don't be thinking about your response. Listen with both ears and both halves of your brain.

You have identified the problem. Start looking for solutions. Most likely, many have surfaced during this conversation (check your yellow pad now). There are many possible examples as we look back at our example, including:

- Better communication. The salesperson tells Customer Service about the important order before leaving town
- Entering a preliminary order, without the salesperson, to allow credit to start working on credit approval.
- Better access to specifics of the sales quote by internal staff, i.e. a systematic method for storing quotes.
- The most important lesson is that everyone from sales to order entry to credit to the warehouse must value the customer order. That is a change in culture and will not be accomplished overnight.
- Our list could continue. You have probably identified a number of other solutions not listed here.

Decide if you can fix the problem(s) all at once or if you will solve part of the problem. Are there many threads to the problem? Sometimes, a phased approach is preferable to taking on several major changes at the same time. Remember this is a process of "Continuous Improvement." Take the first step. How do you know which step to take? Evaluate the "investment" and "payback" on each part of the solution. Take the step with the best ratio and implement it. Keep track of what you have left undone and set a time to deal with those issues.

Publish your findings and your solution for the whole company. You have invested your company's valuable resources. Part of the payback is the new corporate knowledge. You have two important "paybacks" here. Not only did you solve a problem, your team has a victory and they should savor a good pat on the back. They have learned new skills and solved a problem.

Typically, there are many threads to a problem. Unless these threads are hopelessly interwoven, it might make sense to develop a phased approach. The threads of a problem might require changing manual processes, equipment investments, employee training, process automation, etc. Attempting to tackle all the threads simultaneously can lead to over-committing resources and over-whelming staff which can lead to failure.

How do you get started? Evaluate the "investment" and "payback" on each part of the solution. Take the solution with the best ratio and implement it. Keep track of what you have left undone and set a time to deal with those issues.

Make sure to publish your findings and your solution to the whole company. You invested a lot of valuable resources. You have two important paybacks here. Not only did you solve a problem, your team has a victory. They can and should savor a good pat on the back. A more subtle payback is the new corporate knowledge; a better understanding of your business and further developed problem solving skills and team work.

Finally, just because you solved one problem, it doesn't mean you can sit back. Improvement is a continuous event. Keep looking and keep solving. Conditions change. Customer requirements change. Vendors change. Set your goals and keep going after them. Your best days are still ahead.