"Please Think About:
Problem Solving and Leadership
for a Lean/Continuous
Improvement Culture"

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WANT A PROBLEM SOLVING CULTURE?   TRY LEADING FROM THE MIDDLE

David Verble, Lean Transformations Group, March 3, 2011

I spent fifteen years working with Toyota in North American and Japan, and discovered first-hand one of the most powerful aspects of the company's core strength: the shared assumption that I and every other employee was personally responsible for problem-solving within the scope of my job as part of my job. I now realize that this expectation was the basis of "the personal problem solving responsibility" culture in the company.

One example of this culture is the Toyota plant in Georgetown, Kentucky. The plant website reports that employees there submit an average of over 90,000 suggestions per year. That is an impressive number for a site with around 7,000 employees, 6,500 of whom are eligible to submit in the program (first-line supervisors and above are generally not.) But the really impressive thing is that over 95% of those suggestions are not just ideas for improvements. They are changes and countermeasures that have been implemented and confirmed as effective before they were submitted. And the vast majority of those 90,000 improvements addressed small problems that got in the way of or caused waste in the employees' daily work or work areas.

How does a company manage to produce such dramatic results? These numbers indicate a shared set of assumptions and values that looks for ways to improve existing practices. How can you, how can a company, create a problem solving organizational culture?

Let's assume that you cannot command or delegate the shared responsibility to think that is apparent in the Kentucky Toyota plant (and others around the world.) This responsibility goes beyond the requirements of a job description. It must be created through the discretionary effort of every individual. It cannot be achieved, to use lean terminology, through "push" but through "pull." The work environment needs to be one in which employees feel a "pull" to contribute to the common good and decide to respond to problems they see rather than "work-around" them.

I can suggest one route to achieve this, based on reflecting on my experience with Toyota. I worked and dealt with hundreds of Japanese managers, supervisors, coordinators and leaders while I was in Toyota and one thing that stands out to me is the consistency of their requests and questions to me:

"David-san, please think about…"
"What exactly is the problem you are trying to solve?"

"What is actually happening?"
"How do you know that?"
"Why is it happening?"
"Why do you think that?"

The impact of these questions was both uncomfortable and profound. They made me stop and think. They made me think about what I was thinking and why I was thinking it. I had to step back from my observations, ideas and opinions and look at what they were based on. And the message behind the questions was powerful and personal: my job was to contribute as needed from the context of my role in the company. And it was my responsibility to think about how to do that, including figuring out how to deal with problems that came up as I tried to deliver. I knew that the problems that turned up as I tried to do my work were mine to solve or that it was my responsibility to take initiative and seek help if they were beyond my scope.

Compare that sense of role and responsibility to the "work-around," "not-my-job," "nothing-I-can-do" attitudes that seem to dominate most companies. Do you wonder why those attitudes are so different from the expectation that all employees can and should be problem solvers?

Do you recognize some of the following underlying assumptions in the culture of your company, or the companies that you deal with:

- That management makes the decisions?
- That managers should know the answers?
- That managers, engineers, and other specialists are the problem solvers?
- That most employees don't know enough or care enough to solve problems?
- That supervisors should break things down and delegate tasks not responsibilities?
- And finally, the most stifling of all: that "Failure is not an option?"

The questions that result from such workplaces couldn't contrast more with what I experienced. They run along the lines of: Who screwed this up? What the heck were you thinking? Don't bring me a problem without a solution. If that's your plan, then it had better work. Don't give me details, just tell me when it's fixed.

So, if you are a manager in a company that aspires to have a problem solving culture, what can you do? Here are two thoughts to consider:

First, bringing about the kind of culture change that is needed may not be a job for top-down, blanket solutions: this approach is in fact part of the thinking that put us where we

are. To quote John Shook, "It's easier to act your way to a new way of thinking than think you way to a new way of acting."

Second, there are a couple of new ways of acting that can go a long way toward creating a problem solving culture in a company. First, when dealing with employees whom you want to help develop a problem solving mindset, you must restrain the impulse to show what you know. You need to ask questions that you don't think you already have the answers to. You can let your natural curiosity lead and try to learn what the employee knows.

In addition, you can take on the role as a manager or leader to create a safe zone where failure is allowed to happen and employees can experiment with improvements and countermeasures, and learn from the outcomes. That's ultimately how we solve problems and how we learn from problem solving.

These different ways of leading as a manager point toward a way of enacting culture change that could be called "Lead from the Middle." Just think of the impact on business and operational performance if we could take the thinking and the effort that goes into workarounds and re-channel it into actually addressing and eliminating the problems employees encounter (and create!) as they are trying to do their jobs.

PROBLEM SOLVING FOR LEAN CONTINUOUS IMPROVEMENT

David Verble, Lean Transformations Group,   March 14, 2011

If a problem solving culture is the means to continuous improvement as a way of doing business it may be helpful to "unpack" the term and consider what it implies. At first glance neither part of the term seems anything special. All companies have a culture and all companies solve problems to some degree. The question then is what, is different about this problem solving culture that many continuous improvement leaders want to have? In this column I will consider the nature of the problem solving required for Lean continuous improvement. In a later column I want to explore the "culture" side of the Lean problem solving culture equation.

Since Toyota is the model most often held up as a problem solving culture it seems logical to see what can be learned from what they do. In my last column I shared some facts about the breadth and depth of Toyota's problem solving culture. It is an environment in which employees don't just have ideas for improvement but take the initiative to get agreement to try them out and if they are proven effective then submit dozens of them as suggestions annually for recognition and reward. The key question for others wanting such a problem solving culture is, what does the problem solving involved look like?

First, problem solving as it is carried out in Toyota has two distinguishing features. One is the requirement that everything described or claimed in the problem solving process (the problem itself; the target condition, the direct cause, the root cause) be based on confirmed facts and not assumption and interpretation.

The burden of proof on the problem solver is emphasized through questions and expectations such as, "What's the real problem?" "Go to the gemba and grasp the actual condition first hand." "What is purpose?" "How do you know that?" "Keep asking Why, at least 5 times." "How do you know you have an agreement to your plan?" All of these reinforce the expectation that the person claiming to have the solution to a problem or an effective improvement be able to demonstrate with observed facts and data and not just assumptions and opinions why he or she believes a proposed countermeasure to a problem is the right one and will work.

Is this different from most problem solving practice and if so, how? Situations observed in two companies are typical of much problem solving practice. In the first example the managers of production, maintenance, planning, materials handling, quality and safety in a machining operation were in their weekly production meeting. They were discussing

being behind schedule on deliveries and how they would make up the shortfalls. Someone mentioned the impact on run time of grinding machines leaking oil. For 30 minutes the group discussed when the machines could be shut down to fix the leaks, who was to blame for the leaks and issues with the design of the equipment. Finally someone asked exactly which machines were leaking. No one knew.

The second observation was in a center processing credit applications. A team of specialists had been working for six weeks collecting and analyzing data to determine why the operators were running an average of seventy-five seconds over cycle time for initial review of the applications. In spite of their in-depth analyses and experiments the specialists were unable to find the cause of the delay. Finally a session with a group of operators to ask their ideas for fixing the problem was proposed. The group suggested giving the operators a second monitor to have the review guidelines displayed all the time. Since the guidelines had been revised the operators were finding they frequently had to get out of an application and bring the new guidelines up on their screens to confirm instructions. During six weeks of studying the operation none of the specialists had thought to ask the operators what they knew about the delays.

These two situations illustrate an all too common pattern. In many companies problem solving consists of a discussion in a conference room away from the problem. Problem solving proceeds based on partial knowledge and assumption. Seldom is there an effort to go to the site of a problem to observe what is actually happening and ask for the input of those doing the work at the site. There is a leap from problem recognition to solution without taking time to determine the real problem or its cause. This is not the kind of fact-based problem solving that Toyota demands for deciding countermeasures and prosing improvements.

There is a second key distinguishing feature of problem solving at Toyota and it has few parallels in problem solving in North American settings. It is the recognition that problem solving really begins rather than ends when implementation starts. Expressions like "Planning is essential; things never go according to plan" indicate Toyota's perspective on implementation. A plan is a theory of both what will address the cause of a problem and what it will take to implement a countermeasure to that cause. The implementation process is a learning process to find out what actually will be required to put countermeasures in place and eliminate a problem.

In the Toyota perspective implementation or "DO" is part of the Plan-Do-Check-Act cycle but there are also many smaller PDCA cycles in the DO phase. It is recognized that a plan is no guarantee of implementation according to plan and that constant checking and grasping the situation are necessary to have things go according to plan. Two key practices during DO in Toyota's approach to implementation are "managing

performance to plan" and checking "Plan versus Actual." The emphasis is on picking up gaps between what was planned and what is actually happening during implementation, identifying their causes and making countermeasures to close the gaps. Another way of looking at implementation as practiced in Toyota is that you are likely to need to solve a lot of problems to actually solve a problem or make an improvement. This approach might be better described as problem resolution rather than problem solving.

These practices are in contrast to the typical approaches to implementation in North America. In North American companies many admit the approach is often more P-D than P-D-C-A. Implementation in North America seems characterized by two extremes. On one hand is what appears to be the assumption that once the solution to a problem is identified that the hard work is over and everything will fall into place because now the solution is known. This may be a reflection of the nature of problem solving as experienced in math and science classes in school and college. Students are taught if they take the data given, plug it into a formula in the right places and perform the operation correctly they will get the answer. Problem solved. The difference is textbook problems are structured problems. Most of the problems encountered in business, technical operations and human systems are unstructured. The desired outcome is not known; the data is not given; there is no formula to use, and there are often many, not just one, answers.

At the other extreme is the detailed project planning and management approach that breaks implementation down into a series of numbered tasks. The breakdown of goals and actions to identify those tasks is often done by specialists and the tasks are assigned by project managers who are removed from the work processes that will be used or changed. There are checks at phase gates or major milestones but progress is often evaluated with codes such as green, yellow and red. What is frequently missing is consideration of the nature and causes of the red and yellow gaps and whether what has actually been achieved by "green" progress is the outcome that is needed.

Fact-based problem solving, project management following the Plan-Do-Check-Act cycle and Plan-versus-Actual problem solving to drive implementation of countermeasures are key features of the Toyota Way of problem solving. So is Respect for People which includes assuming employees have the ability to think. This column has looked at the **technical** side of a problem solving culture based on the Toyota example. In a later column I will explore the **social system** side of problem solving culture.

LEAN CONTINUOUS IMPROVEMENT AS CULTURE

David Verble, Lean Transformations Group,   March 29, 2011

This column is going into uncharted territory – some might call it the dark side – of the organizations where we work – their cultures. The question I want to raise is, Exactly what is the nature of a culture that could be called a problem solving culture? In an earlier column I talked about Toyota having a "culture of responsibility." Now I want to try to describe what I believe that animal looks and acts like based on my experience, and beyond that, what contributes to its development.

I'll start with what I understand an organization's culture to be. It is a set of assumptions-in-operation. By that I mean it consists of the generally shared beliefs, both spoken and tacitly held, about how things <u>really</u> work, are done and not done, and how the people doing the work should deal with one another as they go about the business of the organization. It is a set of guidelines that is generally more assumed than stated. That means we are going to have to focus on the social and people side of an organization to "go to the gemba" of its culture.

Machines, materials and methods do not make and hold assumptions. People work in the mechanical and technical systems and the organizational structures of a company and over time develop shared assumptions about what it means to live and work there. The people – all the people, not just management – are the keepers of the culture of an organization. But executives and managers are without doubt the key contributors to the development of a company's culture.

In his book on change leadership, **Beyond the Wall of Resistance**, Rick Maurer refers to Douglas McGregor's work in the 1960's describing opposing sets of assumptions that managers can have about human nature. In **The Human Side of Enterprise,** McGregor distinguishes between Theory X assumptions which hold that people are basically irresponsible at work and have to be directed and controlled to perform as needed; and Theory Y assumptions, which are based on the belief that the desire to be responsible, to contribute and perform effectively, is basic to our human nature and the way most people will approach their work if allowed. Maurer suggests that in spite of fifty years of management thought and talk to the contrary, many people and managers continue to be Theory Xers in "sheep's clothing." If Theory X assumptions are indeed still in operation, how would they affect managers' decisions about giving employees problem solving responsibility?

To illustrate by contrast, consider the response by the former chairman of Toyota, Fujio Cho, when John Shook asked him about the keys to lean leadership. Mr. Cho

suggested three simple behaviors. First is, "Go SEE." Managers including senior managers must spend time on the plant floor to know the actual conditions they are trying to manage. The second is, "Ask Why." It is critical for managers to question their observations, interpretations and assumptions as well as those of others by persistently asking what facts underlie them. And the third is, "Show Respect."

The first two behaviors can be considered part of technical problem solving but the third is clearly on the social side and is not often part of our problem solving thinking. With regard to "Respect" Shook further explains that Mr. Cho is saying, "Respect your people" – the people who do the work and create the value in your company. What does it mean to actually "respect your people" as part of your way of managing in a more concrete form than saying, "our people are our greatest asset"? Drawing on both the Toyota example and my experience with the ups and downs of lean thinking in North American I would suggest three interpretations.

First, Toyota's focus on eliminating waste **ensures that the work is organized so it does not waste the time and effort of employees.** One of the basic principles in establishing standard work is that the operator should not wait on or work for the machine. Machine cycling should be planned to allow the operator to do other value-added work and free him or her to attend to more important things like safety and first-time-through quality. Also it is management's responsibility to organize the work flow and work place starting from the needs of the operator out so that he or she can the perform value-added work with as little interruption as possible. This responsibility extends to organizing work processes and information flow to assure the operator can move and perform safely and to minimize rework due to unclear instructions, standards and status indicators.

A second manifestation of respect for the employee is to **start from the positive** rather than the negative **assumption about his or her willingness and ability to take on responsibility** beyond simply carrying out tasks as instructed. That basically means operating from the assumption that employees who resist taking on greater responsibility when allowed are the exception not the rule. Daniel Pink in his 2009 book, **Drive**, reviews fifty to sixty years of study into what motivates people at work and reports that the most effective motivators, particularly for work that requires thinking, are not extrinsic rewards and financial incentives but the basic human intrinsic drives for **autonomy** (having some control over their work), **mastery** (the chance to grow and to increase capability) and **purpose** (feeling you are contributing to something bigger than yourself.) This would seem to indicate that managers and executives would do well to start from the assumption that their employees want no less than they themselves want in their work lives.

The third, and most critical interpretation, is to give people the respect of **recognizing they can and will think if allowed**. It has been said the most flattering and affirming thing you can do for another person is actually listen to and acknowledge what he or she is saying. I suggest there is a degree of respect beyond that and it is to demonstrate you assume there is thought behind what they say and it is worth attending to. In a work environment that takes the form of first giving employees responsibility for recognizing and addressing problems within the scope of their work and their work area and second, and even more important, not taking back the responsibility after giving it. The impact of discounting employees by taking over problem solving responsibility is so great that it is better to never give it in the first place. Managers need to be especially sensitive to this because it is so easy to do. Even suggesting an enhancement to any employee's idea can be disempowering.

Skeptical that the assumptions leaders hold make a difference? Consider this research, which has been repeated numerous times with groups of school kids. Teachers are given groups of kids who have demonstrated on tests and through their work that they have equal abilities. The kids are randomly divided into two groups and the teachers told one group has less ability than the other. Within a short time the group credited with higher ability is consistently outperforming the other group. The factor that is observed to have the greatest influence on the performance of the two groups is the difference in the way the teachers treat the groups depending on whether they have high or low expectations of them. Are managers any less likely to be influenced by their unconscious and unquestioned assumptions?

Managers and executives are not evil people who set out to create organizations that diminish the value and human dignity of their employees. In many ways they are victims of the assumptions they hold as well. The Theory X underlying assumptions about employees that were prevalent in management thinking for the first two-thirds of the twentieth century may be so deeply engrained in our organizations and management practices that we are not conscious of their influence. But if the people who do the value-creating work in a company are indeed its most valuable asset, it is going to be difficult for companies to realize their full business potential if they waste or ignore much of their employees' potential to contribute.