



The importance of problem solving

2015

The importance of problem solving

Lean is unfortunately often linked only to a production system where we create efficient processes. But to truly understand what is at the heart of Lean it is important to understand its origin.

The Toyoda family (Yes, they were originally named Toyoda, but changed the name to Toyota as it looked nicer), like many other prominent industrial families in Japan, had heritage from the samurai culture. This heritage created a way of working that enforced pride and expertise in all of their daily chores and drove a need of continuously standardizing and perfecting the way of working (continuous improvement). If they improved a 'process' it meant more food or better life conditions for the family. Naturally the elderly, and more experienced, people were teachers and coaches of the younger ones. Often, as the young apprentice learned to do chores and did not do them to perfection, the elderly mentor would use coaching methods to help the apprentice see the mistake and address it.

These are the same methods used in Toyota today. And the same methods used in Toyota when the Toyota Production

System was created. When Toyota Production System was created by Taiichi Ohno, it was created in response to problems that occurred where the processes did not create consistently good results, because of changing market conditions. Taiichi did not accept that these were market issues that could be effected, but rather started to work on improving flexibility to meet changes in market conditions.

If Taiichi Ohno and Toyota was a government today, the response to problems in the country would probably not be Toyota Production System, but the way how they got there would be exactly the same – understand and solve the problem using problem solving methods and mentoring.

Here comes the big and important learning for any organization – don't copy the Toyota Production System. Instead, focus on building skills in the organization that allows you to develop your own solution for your own problems – not Toyotas problems. If we should learn something from Toyotas journey, we should learn that two of the most important intrinsic skills for an organization to develop are i) problem solving and ii) mentoring.

Undoubted effects of problem solving

Problem solving has always been at the heart of Toyota. But Toyota is not the only organization that lives through this. McKinsey & Co together with General Electric are two of the largest and most influential organizations in the world. They have two things in common. Firstly, they by far provide the most number of CEO's to the world. Aside from their normal service lines they are both a massive producer of top executives. Secondly, and likely the main reason for the first point, they have an almost sect-like belief in problem solving as core tool for the business. GE is known for being the broadest sponsor of six sigma. McKinsey, with slightly more allure around them, has for all their clients been known for their excellence in problem solving. In fact no organization on Forbes top 100 list, that has stayed there for longer than 10 years, stands without a clearly defined and globally standardized problem solving method. Not all uses it as good as Toyota, McKinsey and GE, but they all have it.

I've been trained and been a trainer in problem solving at both Toyota and McKinsey. I have helped to install problem solving as an organizational method in more than 50 different companies, ranging from mines and airports to software development companies, banks and industrial companies in

automotive, electronics and medicine, and the difference is amazing. In the immediate space, we will see that we are finally removing practical problems (safety, quality, delivery) that has been haunting the organization and its customers for some time.

But the real effect is in the long term. When we adapt problem solving as mindset and as methodology we create the basics to address our business challenges in the same way as Toyota did. We get the full organization to understand and communicate in the same way, understanding the problem in the same way – and crucially building understanding coherently allowing better ‘stickiness’ of the solutions needed. Toyota would never have succeeded unless they had the culture of Samurai in the company DNA. Nobody would accept the needed changes. Today’s challenges are usually not that different – what to do is not the challenge, it is how to do it and make it stick that is the problem.

Installing problem solving requires mentoring

This is not an easy process to install. The second piece I mentioned from Toyotas past is mentoring and this is the way to train problem solving. We train the trainers and coach the coaches.

In Toyotas organization, people always enter through the lower ranks and grow in the company. Hence, they are being mentored in both mentoring and problem solving so that they can do the same to people entering after them.

When installing this kind of processes in a company that does not have it, we tend to roll it out top down. Starting with the General Managers, Lean and Quality managers. They then have the responsibility to start training the trainers (typically managers as a first step) at their local sites so that they can then together roll out the approach throughout the full site. It is important that the process is coherent through all time. Each of the site trainers need to be trained by exactly the same people centrally and the executives needs to be asking questions in the right way to nurture problem solving and mentoring. Centrally, strong follow-up (in the shape of metoring) needs to happen to ensure that problem solving and mentoring does not go in different trajectories in the different BU's. To ensure this is the case, sometimes efforts are driven to take the BU's one by one – but if the processes to provide training and mentoring are good the roll-out can be quicker through several BU's in parallel. As with everything, a standard solution is seldom the best case, but the roll-out needs tailoring to the specificfiness of the organization.

The problem solving process

The process itself is built on PDCA (plan, do, check, act) and follows a set structure as outlines in exhibit 1.

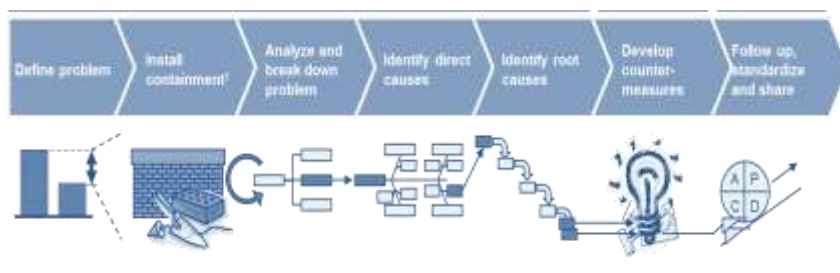


Exhibit 1. Problem solving process.

The process starts with defining the problem. Problem solving can't be made unless we have defined a measurable gap between a standard or expected state and a current state. I have seen a large amount of problem solving fail because the team did not spend enough time to define the problem. They have after a few weeks needed to go back and restart. In my mentoring approach I could have said "told you so" or forced them earlier to define the problem properly – but learning through mistakes means this team will never do this mistake again. And it is sometimes needed for a team to make these mistakes just to learn.

Once problem is defined we should install a containment to protect our customers and/or employees. This unfortunately is where many problem solving stops with the result that we, for instance, have added an additional inspection point but not solved the actual problem and hence only added more cost to our system. Customers stopped screaming, so instead of solving the problem properly, we were stressed to take on the next thing someone screams about.

Once containment, if needed, is installed we start to statistically break the problem down in details until we know enough about the problem so that we may stand and observe it exactly when, where, with who and what parts the problem is happening. At this point, and only at this point, can we start to observe direct causes and find root causes by starting to ask “why”. Before this point, we should never ask “why”, as it will lead us to assumptions without facts and typically is another reason why we are not solving problems today – we assume the solution and hence does not solve the right root cause.

When we have found the root cause of the problem we start to define solutions and standardize these. It is at this last stage we will again see the link to Toyota’s history and how they developed their production system.

Learning from your own problems and defining your future

When you have solved enough problems you will start to see trends in them. The good problem solvers connects the dots and see larger problems. If we are consistently delayed to customer and solving a myriad of problems around this, maybe it is time to start looking into our planning process? If we are consistently seeing quality problems with new products maybe it is time to start addressing our NPI process? The signs are usually quite clear. A root cause can come in short-term and long-term versions. The short-term root cause takes away the problem from ever occurring again on this product and the long-term root cause stops the problem from ever occurring on future products. And the really long-term root causes takes away *any* problem from happening on future products. This is an important difference. The Toyota Production System was developed to ensure taking away problems from ever happening in the future of new products, companies, people etc. It was developed because Toyota learned from their problem solving and materialized this learning.

Bottom line. If we can sufficiently adapt problem solving at our company, we will short term address the important issues

we are facing internally and externally at the moment. Throughout this journey we will also learn how to develop our own Operational System to always be able to adapt to changing requirements and new challenges.

Jonas Svanäng

Lean and Leadership expert, reLean

About reLean

reLean is a recruitment, training and consulting firm based in Sweden and the UK with experts that knows lean from the source at Toyota. We help our clients to find and develop the right leadership talent for their challenges.