

TOYOTA PRACTICAL PROBLEM SOLVING SOFTWARE

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Practical Problem Solving (PPS) is a FACT-BASED problem solving methodology that is an integral part of the Toyota Production System (TPS) approach to Kaizen, or continuous improvement.

This methodology grew in the factories of Japan as TPS took root under the guiding hand of Taiichi Ohno, the "father" of TPS.

It's important to note that PPS as fact based is a much different methodology than the problem solving commonly used by business in the west. Western problem solving relies heavily on brainstorming as the source of possible solutions. PPS lets the gathered facts of a situation lead to the solution.

The dominant concept of PPS is "Genchi Genbutsu" or Go and See firsthand. With each step of gathering the pertinent facts the problem solver is asked to document or describe What is Actually Happening, based on first hand observation, versus What Should Be Happening, or the standard.

This comparison then allows the identification of an abnormality(s), or the Real Problem.

Once the Real Problem is identified then solutions become more apparent through a process of Cause/Effect analysis using actual testing for Root Cause and monitoring of countermeasures to assure long term effectiveness.

The purpose of this method of problem solving is to identify countermeasures that will permanently resolve a problem and prevent recurrence of that problem. Once a problem has been permanently resolved the manufacturing process can then be evaluated for possible improvement or Kaizen. Unstable processes with recurring abnormalities cannot be improved to maximum efficiency.

In Japan, this methodology is taught by Toyota to its team members through a progressive series of assigned problems which first teach the basic methods and then the multiple applications of the methods. These assignments also progress in difficulty as the team member develops skill in the methods and knowledge of production processes.

Once a problem is resolved, the team member then prepares a formal report of his activity. The report then goes through a series of report outs and revisions guided by the supervisor and meant to increase the team member's learning of the process of PPS and the company's way of thinking.

PPS and the formal reflective reporting on the process then become the fundamental base of development.

This development begins within the first year of every team member's career at Toyota and continues throughout their time with the company.

This software was born out of a need to replicate the reflective learning system established at Toyota Motor Corporation in Japan, without the historically extended individual development cycle.

It also puts at the disposal of the team member a host of designated problem solving experts to turn to for coaching and support. In Japan, where employees generally remain with a company for their entire working life, the company can take 5 to 15 years to develop team members in problem solving. In North America, where employment is rarely lifelong, and the pace of production has accelerated, Toyota team members must learn to solve problems in rapid time.

Toyota PPS software attempts to accomplish the following:

- Guidance Through and Teaching of the Problem Solving Process
- Coaching at particularly difficult points from both the software or a designated PPS expert
- Feedback on the method and the quality of the problem solving
- Recording and reporting of the problem solving
- Archiving of all problem solving to be retained as a knowledge base
- Opportunity for discussing a problem and receiving feedback from designated PPS experts
- Automatic reporting to management of current problems in their area
- Community of practice discussions

Toyota has long considered its ability to permanently resolve problems and then improve stable processes as one of the company's competitive advantages. With an entire workforce charged with solving their workplace problems the power of the intellectual capital of the company is tremendous. The accelerated development cycle possible through the use of software support will result in the faster resolution of actual problems, the retention of knowledge of past problem solving efforts and improved efficiency in manufacturing processes.