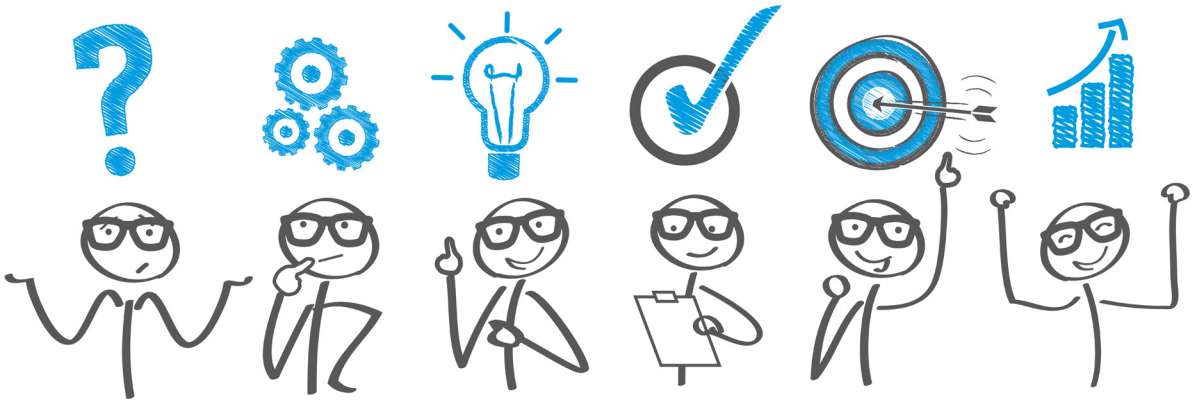
PROBLEM-SOLVING



DEFINITION

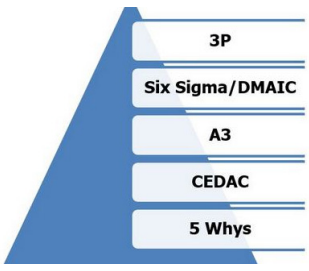
- A team-based process part of daily work that is embraced by all levels of the organization, used to identify and correct problems using methods and techniques specific to the scope and complexity of the problem.
- The process by which we find solutions.
- (A problem is a deviation from standard, target, expected outcome, or normal operating conditions).

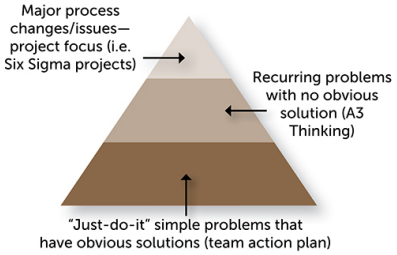
MINDSET AND CULTURE

Problems are inherent in the transformation process, so establishing a problem-solving culture is necessary to keep organizations moving forward. Team-based problem-solving becomes part of daily work as employees, driven by leaders, learn how to: categorize problems; define the problem and its extent; identify cause and effect; drill down to root cause; and create improvement solutions / steps to get from current to future state.

METHODS AND TECHNIQUES

There are a variety of approaches in the problem-solving toolkit to address all types of problems, from simple, day-to-day problems, to those that require more sophisticated tools to solve. The key is understanding which method to use and when, based on the depth and criticality of the problem. For example, Six Sigma methods shouldn't be applied when a simpler technique such as 5 Why's would suffice. See below for a brief definition of various types of problem-solving methods:





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5 Why's
This simple problem-solving technique is a process of asking "Why" 5 times (or more) to get to an "actionable" root cause. 5 Why's is most often used by natural work teams to address problems as they occur throughout the workday (i.e., missing a production target in a single hour in a work shift).

CEDAC ("Cause and Effect Diagram with the Addition of Cards")
This technique uses a fishbone diagram with fact and idea cards to move from problem to target statement and solve problems at the source. Natural work teams use CEDAC to solve reoccurring problems (i.e., recurring quality loss).

A3
A3 uses the concept of a single sheet of paper to capture all relevant information in a logical, concise, visual, incremental sequence to solve a problem. A3's are best used for more complex problems (i.e., for resolving ongoing cost or quality issues), often involve cross-functional teams, and are typically supported by a sponsor. Watch for our next WOM which will take a deeper dive into A3 Thinking.

Six Sigma/DMAIC
6 Sigma and its steps of Define/Measure/Analyze/Improve/Correct, is a quantitative analysis method used for complex, on-going variability problems (i.e., for a reoccurring equipment/product/service quality issue), which requires deeper and extensive data analysis to explore all causes of variability. It requires a high level of experimentation, specialized skills and software, a sponsor, a project charter, and management oversight.

3P
Originally used to design new products and processes, today 3P is used to revamp existing products/processes and solve chronic problems. Cross-functional teams brainstorm, prototype, and test new ideas. This structured process requires management oversight, a sponsor, a charter, and a dedicated workspace. (i.e., to address ergonomic issues, etc.) Click here for a past WOM featuring 3P.

FUNDAMENTAL TO ALL PROBLEM-SOLVING METHODS: THE PROBLEM STATEMENT

Creating an effective problem statement is a critical step in the Problem-Solving process, more so with problems of greater complexity. It should provide a clearly defined description of the problem being solved, and the gap between current state and desired future state. It should be simple and clear, state what is wrong, express a specific timeframe and comparative value, and include the following 3 components:

1. A Compelling Opening:
   clearly identifies the problem selected, the impact of it on the organization, the gap from current to ideal future state
2. Related Context:
   clearly defines current state — must quantify situation via time, money, etc. to present a focused target for resolution
3. Future Ideal State (Target Effect):
   clearly states what should be done about the problem in terms of time, money, etc. along with date for completion

A FEW TIPS AND GUIDELINES

Remember, problem-solving is an *on-going*, organizational-based process. It's everyone's role to continually look at the workplace and processes with fresh perspectives and seek opportunities for improvement. Be mindful of the following:

- Accepting problems as the norm and thinking old workarounds are sufficient
- Making assumptions — be sure to get first-hand information about the problem directly from Gemba and the people doing the work
- Double check — be sure the right tool is being used for the problem
- Document solutions for future reference and adherence
- The need for follow up — the greatest learning occurs with testing and reflection

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PROBLEM-SOLVING

BENEFITS IN THE WORKPLACE

- Eliminates reoccurring problems
- Keeps your organization in motion, continually learning and improving
- Improved worker knowledge, communication, confidence, and independence
- Improved flow, flexibility, and response times
- Increased internal and external customer, vendor, and partner satisfaction

The benefits of problem-solving go beyond the "technical" methods and techniques application and address the "soft-skills." For a quick read on this perspective, click here for the article at testgorilla.com on *The Importance of Problem-Solving Skills in the Workplace*."

PROBLEM-SOLVER, NOT TO BE CONFUSED WITH

Prioritizer. A masterful prioritizer and formidable problem-solver at work, Jeff lacked even the most basic of these skills at home. That's why he chose a night out with the boys over wining and dining his wife on their anniversary. It did not take a 5 Why analysis or a team of Six Sigma experts to determine the root cause of her less than stellar mood or why he ended up sleeping on the couch. At least the dog forgave him for being an abysmal home prioritizer. Wag wag.

FAMOUS QUOTE ON PROBLEM-SOLVING

"If I had an hour to solve a problem, I'd spend 55 minutes thinking about the problem and 5 minutes thinking about solutions."

Albert Einstein

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