MACH 1000

ERP RECRUITING

Problem Solving Tools

"We cannot solve our problems with the same level of thinking that created them" — Albert Einstein

Problem-solving tools are techniques used to identify, analyze, and solve quality-related issues in processes and products. These tools have been widely used in quality management and continuous improvement methodologies like Six Sigma, Lean, and Total Quality Management (TQM). Here are some of the most popular quality problem-solving tools:

- **Check Sheet:** A simple document used to collect data in real-time at the location where the data is generated. It is especially useful for tracking the frequency of specific events.
- **Control Chart:** A graph used to study process changes over time. It displays data in time order and can highlight when data points fall outside of either control limits, indicating potential issues.
- **Histogram:** A bar chart that shows the frequency distribution of a dataset. It can highlight common patterns and variances within a process.
- **Pareto Chart:** A type of bar chart that displays the most significant factors in decreasing order of importance. It is based on the 80/20 principle, suggesting that 80% of problems are often due to 20% of causes.
- **Fishbone diagram (cause-and-effect diagram):** A Fishbone Diagram, also known as the Ishikawa Diagram or Cause-and-Effect Diagram, is a visual tool used to systematically identify and present potential causes of a specific problem or quality issue. The diagram looks like a fish's skeleton with the various bones representing the roots of a problem.
- **Scatter Diagram (Scatter Plot):** A graph that shows the relationship between two variables. It can help identify potential correlations.
- **Flowchart:** A graphical representation of a process, showing the steps as boxes and their sequence connected by arrows. It is useful for understanding and analyzing workflows.
- **5 Whys:** A technique that involves asking "Why?" repeatedly (typically five times) to drill down to the root cause of a problem.

- **Affinity Diagram:** Groups enormous amounts of data into related categories based on their natural relationships. It is particularly useful during brainstorming sessions.
- **Stratification:** A technique used to separate data into organized layers or strata. It helps in analyzing the behavior of data based on specific categories or factors.
- **Run Chart:** Similar to a control chart but without statistical control limits. It plots data points in the order in which they occur and is useful for spotting trends or patterns over time.
- **PDCA Cycle (Plan-Do-Check-Act):** An iterative method for continuous improvement, developed by Dr. W. Edwards Deming.
- **FMEA (Failure Modes and Effects Analysis):** A step-by-step approach to identify potential failures in a product, process, or service and rank them based on their impact and likelihood.

Use these tools to assist team members in understanding problems, identifying root causes, and implementing effective solutions to improve quality and efficiency.