

Glossary of Lean Terms

A3 – A3, named after the European 11x17 size paper, is a problem solving tool and communication method that uses a one-page PDCA (Plan Do Check Act) story board to error proof problem solving.

Abnormality Management: Ongoing tracking of metrics, priorities, recurring issues, and countermeasures; rapid Andon response process when conditions are off-track.

Andon: A Japanese term for “signal light.” Andon is a signal to notify everyone of a quality or a process problem.

CAPA – The purpose of Corrective and Preventative Action (CAPA) is to identify and investigate product and quality concerns and take appropriate and effective corrective and/or preventive action to prevent recurrence.

SCAR – A Supplier Corrective Action Request (SCAR) is sent to an internal or external supplier where an item or process is in nonconformity and a remedy is required.

CI - Continuous Improvement: Aligns with the Kaizen approach, aiming to always get better and sustain process improvements

COPQ – Cost of Poor Quality: It is a measure that specifies the importance of poor quality in terms of monetary value. It is always measured and tracked in terms of money.

Counter Measures – Proactive measures designed to eliminate or mitigate the root causes of issues and create sustainable improvements.

CTQ – Critical to Quality: the key measurable characteristics of a product or process whose performance standards or specification limits must be met to satisfy the customer. They align improvement or design efforts with customer requirements.

Cycle Time: Total time from beginning to end of process/rate at which goods are produced.

Daily Accountability: Provides a structured routine for daily review of metrics and information, pareto of issues and opportunities, countermeasures and follow-up.

DBH Boards - Day by Hour Boards:

DMAIC- Design, Measure, Analyze, Implement, Control: A 5-step, cyclical process to Continuous Improvement (CI) related to a six sigma project

Similar Process: PDCA

DOE – Design of Experiments: a method to find out the relation between factors affecting a process and the output of the process. It tries to build a cause & effect relationship so that the outcome of a process can be predicted under given pre-conditions.

8D: A problem solving methodology used to approach and to resolve problems with 8 simple steps, typically employed by engineers or other professionals. Focused on product and process improvement, its purpose is to identify, correct, and eliminate recurring problems.

ELS- Enterprise Lean Sigma: Aligns with the Kaizen approach, aiming to identify problems and solve problems across the entire enterprise of an organization and not just manufacturing

Glossary of Lean Terms

Synonym: Continuous Improvement (CI), Operational Excellence (OpEx), Lean Six Sigma (LSS)

5S: A methodology and set of practices used to organize and maintain a clean, efficient, and safe workplace. The 5S stand for Sort, Straighten, Shine, Standardize, Sustain`

5 Whys: a technique used to determine the root cause of an issue. By repeatedly asking the question "Why" (five is a good rule of thumb), you can discover symptoms which may lead to the reason a problem exists.

External Activities – Activities that can be performed while the equipment is running.

FMEA - Failure Mode & Effects Analysis: A quality tool designed to improve the process of discovering how systems fail.

Fish Bone (ISHIKAWA) - A fishbone diagram, also known as a cause-and-effect diagram or Ishikawa diagram, is a visual tool used to identify and analyze the potential causes of a problem or an effect. The diagram takes its name from its shape, which resembles the skeleton of a fish with a central "spine" and branches representing different categories of potential causes.

Gemba: Refers to the place where the action happens (shop floor, at the machine, talking to the Operators, office)

Internal Activities – Activities that require machine to be shutdown

Kaizen: A Japanese methodology meaning "change for better," aiming to continuously surface issues and solve problems by driving quick hit value through implementing do now solutions in a 3-5 day time frame.

KPI – Key Performance Indicator: a measurable value that demonstrates how effectively a company is achieving key business objectives.

Synonym: Key Performance Measure (KPM)

KPM - Key Performance Measure: a measurable value that demonstrates how effectively a company is achieving key business objectives.

Synonym: Key Performance Indicator (KPI)

Lean : Thinking and working with an emphasis on continuous improvement, eliminating waste and adding value to your customers.

Lean Six Sigma – LSS: Aligns with the Kaizen approach, aiming to identify problems and solve problems

Synonym: Continuous Improvement (CI), Operational Excellence (OpEx), Enterprise Lean Sigma (ELS)

Leader Standard Work (LSW): Provides a structure and repeatable routine to drive the thinking and behavior shift from focus on results only to focus on both process and results.

MDI-Managing for Daily Improvement: A lean management process designed to drive effective execution, surface problems, improve process and results every day. It encompasses

Glossary of Lean Terms

four main components: Leader Standard Work, Daily Accountability, Visual Controls, and Abnormality Mgmt.

Synonym: Tiered Lean Management System

MTBF – Mean Time between Failure: a measure of machine maintenance effectiveness

MTTR – Mean Time to Repair: a measure of machine repair effectiveness

OEE – Operational Equipment Effectiveness: a measure of machine effectiveness defined as the product of uptime, quality rate, and efficiency.

OFAT – One Factor at a Time: a method of designing experiments involving the testing of factors, or causes, one at a time instead of multiple factors simultaneously.

OpEx-Operational Excellence: Operational excellence refers to a state of achieving the highest level of performance, efficiency, and effectiveness in an organization's operations and processes.

PDCA- Plan, Do, Check, Adjust: A four-step, cyclical process to Continuous Improvement (CI)

Process Map - PMAP: A graphical representation of the steps involved in a process or portion of a process.

Root Cause: The root cause refers to the fundamental reason or underlying factor responsible for the occurrence of a problem, defect, or undesired outcome.

RPN – Risk Priority Number: a measure used when assessing risk to help identify critical failure modes associated with your design or process (a product of severity, occurrence, and control)

6Ms: Man, Machine, Methodology, Materials, Mother Nature, and Measurements

Six Sigma: A 5-step, cyclical process to Continuous Improvement (CI) utilizing the DMAIC problem solving process to reduce variation

SMART – Specific, Measurable, Achievable, Related/Relevant, Time Bound

SME – Subject Matter Expert: an individual with a deep understanding of a particular process, function, technology, machine, material or type of equipment.

SMED – SMED stands for Single-Minute Exchange of Die, which is a lean manufacturing technique focused on reducing setup or changeover time in production processes. It is also known as Quick Changeover or Rapid Setup.

Spaghetti Diagram – Visual representation of path of process

Standard Operating Procedure – SOP: established or prescribed methods to be followed routinely for the performance of designated operations or in designated situations.

Standard Work: the optimal combination of workers, machines, and materials to meet organizations safety, quality, and delivery objectives every time. Consists of work content, sequence, timing, and expected outcome.

Takt Time: The rate at which customers wants product/service.

Glossary of Lean Terms

Thought Process Map – TMAP: a visual representation of a Black Belt's, team leader's or an entire team's thoughts, ideas and questions relative to accomplishing the project goal.

Tier 1 MDI: is the Managing for Daily Improvement process at the machine/asset level.

Tier 2 MDI: is the Managing for Daily Improvement process at the department level.

Tier 3 MDI: is the Managing for Daily Improvement process at the site level.

TPM – Total Productive Maintenance: an integrated set of activities aimed at maximizing equipment effectiveness by involving everyone in all departments at all levels.

Value Stream Mapping - VSM: A visual tool used to analyze the flow of materials and information currently required to bring a product or service to a customer.

Visual Controls: Provides a visual display of key information and metrics relevant to the team's daily focus and checks; visual Andons to indicate current operating conditions

VOC – Voice of the Customer: a process used to capture the requirements/feedback from the customer (internal or external) to provide the customers with the best in class service/product quality.

VOE – Voice of the Employee: refers to businesses taking feedback from their employees in relation to improvements made for the benefits of customer experience

VOP – Voice of the Process: Term used to describe what the process is telling you. What it is capable of achieving, whether it is under control and what significance to attach to individual measurements – are they part of natural variation or a signal that needs to be dealt with?

War Room: a room in the building of business organization equipped with the technical means to gather information, plan strategy, direct activities, etc., esp. for driving a Managing for Daily Improvement culture

Muda (waste): a non-value adding activity

Muri – Overburden or unreasonableness

Mura - Unevenness