

5S – a five step workplace organization technique used to create and maintain an organized workspace; the five steps are Sort (remove unnecessary items from the workplace), Set In Order (arrange items so they are easily accessible), Shine (clean the work area so it is neat and tidy), Standardize (set standards for workplace organization) and Sustain (maintain and review standards).

5 Why's – a simple problem solving technique to identify root causes of problems; root causes are distinguished from symptoms by continually asking why until the answer is a root cause of the problem

6σ – shorthand for Six Sigma, see Six Sigma

8 Wastes – 8 types of process obstacles that get in the way of the process delivering value to the Customer, see Defects, Over Production, Waiting, Non-Utilized Talent, Transportation, Inventory, Motion and Excess Processing

A3 - a one page working document and summary report of a Lean Six Sigma Project that explains the thinking behind the execution of the project; refers to the standard size of paper (11x17) the report is printed on

Action Plan – a project execution and accountability tool used to capture and track the Who, What and By When of project tasks

Analysis of Variance (ANOVA) – a form of hypothesis testing that determines if there is a statistical difference in the means of two populations of data

Analyze Phase – the third phase of a DMAIC Lean Six Sigma Project; focuses on identifying the root cause(s) of process problems

As-Is Process – see Current State

Availability – the concept that production facilities are capable of producing when they are scheduled to be producing or when needed

Average – the mean value of a dataset; calculated by dividing the sum of the data point values by the total number of data points, see Mean

Balancing – the process of synchronizing process operations, generally making sure that each process step has the same process cycle time

Black Belt – a professional who is trained in Lean Six Sigma tools and concepts; they have a thorough understanding and extensive practice in all aspects of the DMAIC model and all supporting Lean Six Sigma tools

Bottleneck – a step in a process where the process production rate is limited by some constraint and less than the rate of Customer demand

Brainstorming – a free-thinking method of generating ideas around a specific topic with a group of people



Business Process Management (BPM) – the practice of designing, executing, monitoring and optimizing business processes with the intention of continuous improvement of those processes

Cause and Effect Diagram – a structured problem solving tool designed to identify root causes of process problems; see **Fishbone Diagram** and **Ishikawa Diagram**

Cell Design – a way of arranging workstations and equipment to facilitate small lot, continuous flow production; all operations required to produce a product or service for a Customer are performed in close proximity to reduce transportation, motion and **Work in Progress (WIP)** inventories

Champion – senior managers who sponsor and are accountable for the success of Lean Six Sigma initiatives in their organization

Change Management – the field of practice and process of activities lead by a professional to facilitate the implementation, adoption and sustainment of projects and new initiatives in an organization

Changeover Time – the measurement of time of a production process from the moment the last good product was produced to the moment the first good product of the next process is produced

Continuous Data – data that is measured on an infinitely divisible scale; e.g. time, length, weight, temperature

Continuous Improvement – the ongoing, incremental efforts to improve products and processes

Control Chart – a time series graph used to study how a process performs and changes over time; control charts have a central line displaying the average value of the dataset, an upper line representing the upper control limit and a lower line representing the lower control limit

Control Plan – a method of documenting the functional elements of a system or process including actions for monitoring and correcting process changes, an important process sustainment tool

Cross-Functional Map – a process map that separates and defines process steps by the function, department or individual responsible for performing each process step; see **Swimlane Map**

Current State – a process map or outline of a business process developed with process stakeholders that captures the process as it currently functions including opportunities for improvement such as process waste and re-work activities

Customer – any person, group or organization that receives the output or product of a process

Customer Demand – a measure of the rate at which Customers expect the product or service being produced or offered, usually expressed as units per period of time, e.g. 4 units per hour

Cycle Time – the amount of time it takes to complete the work in a process or a process step

Cynefin Framework – pronounced "ku-nev-in", a Welsh word translated as a place to stand; a problem solving tool that guides users to classify situations into five domains defined by cause and effect relationships, helping to accurately assess situations and respond accordingly, the five domains are Obvious Contexts, Complicated Contexts, Complex Contexts, Chaotic Contexts and Disorder



Dashboard – a high level visual display of key performance indicators that communicates the status and performance of a process or system

Data Analysis – a process of inspecting, cleansing, transforming and modeling data with the goal of discovering useful information, informing conclusions and informing decision making

Defect – process waste; issues and errors arising from poor quality process inputs or outputs; any process input, output or service that does not meet the Customer's requirements

Define Phase – the first phase of a DMAIC Lean Six Sigma Project; focuses on defining the problem and goal statements, capturing the voice of the Customer and defining the project scope

Discrete Data – counts or categories of data that can only be described in whole numbers; e.g. number of Customers, number of product defects, counts of different product categories or classifications such as colours

DMAIC – a five step problem solving process commonly used in Lean Six Sigma projects, the five phases are Define, Measure, Analyze, Improve and Control; pronounced "day-may-ik"

Downstream - refers to any process steps or activities that occur after a given process step

Effectiveness – the ability to consistently produce a decided, decisive or desired effect or outcome

Efficiency – the act of achieving maximum productivity with minimal wasted effort or expense

Excess Processing – process waste; unnecessary or redundant activities and processes

Failure Mode and Effects Analysis (FMEA) – a risk management tool used to identify and quantify potential sources of failure in a process, overall risk and mitigating actions are created based on the likelihood of occurrence, the severity of the impact of the failure and the likelihood that a potential failure would be detected

Fishbone Diagram – a structured problem solving tool designed to identify root causes of process problems; see **Cause and Effect Diagram** and **Ishikawa Diagram**

Flowchart – a step by step diagram explaining how to execute a process

Future State – a process map or outline of a business process developed with process stakeholders that captures the process as it they would like it to function after the elimination and reduction of process waste and re-work activities, see **To-Be Process**

Gemba – a Japanese term meaning "the real place"; the location where a process is executed; ther term "Going to Gemba" means to go to where the work is being performed and observe the process as it happens

Goal Statement – a statement that defines the outcome or result of a process transformation initiative including specific process measures and by when the outcome is to be achieved

Green Belt – a Lean Six Sigma practitioner trained in DMAIC who lead small scope improvement initiatives under the direction or guidance of a Lean Six Sigma Black Belt as part of their role in an organization



Handoff Map – an illustration of the number of times a product or work in progress moves from one individual/department to the next, handoffs are a source of errors and mistakes

Histogram – a visual display of a dataset showing the amount of variation in a process, also called Frequency Plots

Impact-Effort Matrix – a method of organizing process improvement ideas and actions based on the relative impact of the action and effort required to implement the action

Improve – process waste; an excess or accumulation or insufficient stock of products, inputs or works in progress that are not aligned with Customer demand

Input – any resource added to a process such as a product, service, data, labour, etc.

Input Measures – measures that describe process inputs, generally related to quantity and quality of a process input

Inventory – process waste; an excess or accumulation of materials, products or works in progress beyond (greater than) the Customer demand

Ishikawa Diagram – a structured problem solving tool designed to identify root causes of process problems; see Cause and Effect Diagram and Fishbone Diagram

Just-in-Time (JIT) Production – a production system designed to produce and deliver the right items, at the right time, in the right place and in the right amounts, integral to the concept of a **Pull System**

Kaizen – a Japanese term meaning "good change"

Kaizen Event – a short duration (typically 5 days) rapid process improvement event led by a trained facilitator with the intention of making process changes in short order using Lean Six Sigma tools and concepts to streamline a process making it more effective and efficient

Kanban – a method of minimizing inventory levels and creating a Pull System to reduce process waste

Key Performance Indicators (KPI's) – an important measure of organizational or process performance against a strategic goal or target value

Lead Time – measures the amount of time elapsed from the moment a Customer places an order to the moment they receive their desired goods or services

Lean – a systematic method of eliminating waste from a process to streamline the process and increase value delivered to the Customer

Lean Pathway – the process of creating a lean transformation, moving from the **Current State** of a business process to fulfill the **Future State**

Lean Six Sigma – a process improvement methodology designed to eliminate problems, remove waste and inefficiency and improve working conditions to provide a better response to Customers' needs

Master Black Belt – an experienced and highly effective Lean Six Sigma expert practitioner responsible for creating portfolios of process transformation initiatives, leading enterprise-wide Lean Six Sigma implementations and training other Lean Six Sigma practitioners



Mean – the average value of a dataset; calculated by dividing the sum of the data point values by the total number of data points, see **Average**

Measure Phase – the second phase of a DMAIC Lean Six Sigma Project; focuses on determining methods of measuring the process, defining key measures, creating a data collection plan and establishing a baseline measurement of current process performance

Measurement System Analysis (MSA) – a series of experiments designed to assess the repeatability and reproducibility of measurement devices (gauges) and reduce the amount of variation present in the data collection process

Median – the midpoint value of a dataset; equal to the mean of a dataset for normal distributions

Metric - a measurement used to evaluate the performance of a process or system

Motion – process waste; excessive movement of people in the process, a result of inefficient workstations

Muda – a Japanese terms for "Waste"; refers to any process step that does not add value from the Customer's perspective

Non-Utilized Talent – process waste; the underutilization of workers' knowledge or skills, stifled creativity and lack of opportunities to contribute process improvement ideas

Non-Value Added (NVA) Activity – process activities that consume time or resources but do not satisfy Customer demands and requirements

Non-Value Added and Required (NVAR) Activity – process activities that consume time or resources but do not satisfy Customer demands and requirements and are necessary for the process to operate

Non-Value Added Time (NVAT) – the amount of time it takes to complete the Non-Value Added Activities and the Non-Value Added and Required Activities in a process

Normal Distribution – a continuous probability distribution in statistics commonly called a bell curve, a dataset distributed symmetrically about its mean with 68% of values falling within one standard deviation of the mean, 95% within two standard deviations and 99.7% within three standard deviations of the mean

Operational Definition – a clear and understandable description of what is to be observed and measured, such that different people collecting, using and interpreting data will do so consistently

Output – any resource such as a product, service, data, labour, etc. that is the result or outcome of a process

Output Measures – measures that describe process outputs, generally related to quantity and quality of a process output

Overall Equipment Effectiveness (OEE) – a means to numerically describe production effectiveness, characterized by three key production losses: quality, availability and cycle time losses



Overproduction – process waste; operating a process at a production rate greater than what the Customer requires

Pareto Chart – a bar chart that displays the most significant categories of discrete data types in descending order and identifies the top 80% of data types, allowing users to focus improvement efforts on the highest impact opportunities

Pareto Principle – the concept that 80% of consequences arise from 20% of the causes of those consequences, asserting an unequal and unbalanced relationship between process input and outputs

Parking Lot – a tool used during process improvement conversations to capture ideas and actions to be evaluated at a later time for implementation

Plan-Do-Check-Act (PDCA) – a simple four step problem solving methodology consisting of Plan, Do, Check and Act; in the Plan phase the issue/problem is identified and a hypothesis proposed for the root cause, in the Do phase an action is taken to address the root cause of the issue/problem, in Check the result/outcome of the action is evaluated against a target/goal and in the final Act phase the solution is adjusted and fine tuned; the 4 step process iterative and can be repeated indefinitely to generate process improvements

Poka Yoke – pronounced "poh-kah yoh-keh", the process of mistake-proofing or error-proofing a process such that errors and mistakes are impossible to occur, effectively eliminating the need for inspection processes

Problem Statement – a clear, concise statement about the symptoms of problems being encountered in a process; references specific process metrics and qualifies the impact of the problem

Process – a stepwise combination of people, tools, materials and methods where an input is converted into an output

Process Map - an illustration of the various actions and steps of a process

Process Measures – measures that describe the performance of a process, generally related to the quality of the process

Process Owner – the person/role responsible for sustaining the performance of a process after a process improvement or transformation initiative completes

Production Lead Time – the amount of time that it takes between when a Customer places an order to when the product or service is delivered to the Customer

Project Charter – a formal working document outlining the problem and goal statements, scope, business case and timeline of a process improvement initiative; identifies key stakeholders for the execution and sustainment of a process improvement initiative

Pull System – a production process where units are pulled through the process at the rate of Customer demand; see **Just-in-Time (JIT) Production** and **Kanban**

Push System – a production process where units are produced at a rate determined by production forecasts or the practice of producing excess goods/services to maintain a certain level of inventory, often results in excess inventory levels, unused goods/services and wasted labour; see Waste



Quick Changeover – a method of dramatically reducing/eliminating the amount of time it takes for a process to change from one process to another; see Changeover Time and Single Minute Exchange of Dies (SMED)

Quick Wins – the implementation of simple solutions to known problems with minimal effort and resources required

RACI – a matrix used to provide structure and clarity to improvement initiatives, identifying process stakeholders and who is Responsible, Accountable, Informed and/or Consulted in the initiative or project underway

Range – a measure of the spread of a dataset; calculated by subtracting the lowest value in the dataset from the highest value

Rework – a type of defect waste where a process step must be completed again or corrected in some way to achieve the desired outcome

Root Cause Analysis – a method of identifying the source of the process problems

Run Chart - a time series plot that displays trends in data over time

Single Minute Exchange of Dies (SMED) – a method of dramatically reducing/eliminating the amount of time it takes for a process to change from one process to another; see Changeover Time and Quick Changeover

SIPOC – a simple and high level overview of a process; identifies the Suppliers, Inputs, Process, Outputs and Customers of a specific process

Six Sigma – a method of reducing variation in a process and reducing the probability that an error will occur

Spaghetti Diagram – a visual representation using a continuous flow line tracing the path of an item or person as it/they moves through a process

Standard Deviation – a statistical measure of a dataset that shoes the average amount of variation from the mean (average) value of the dataset

Standard Work – a written document outlining a detailed definition of the current best practices for performing an activity or a process; commonly includes instructions, graphics and anything else necessary to ensure that work is completed consistently regardless of who performs the tasks

Stakeholder Analysis – a process for identifying, prioritizing and understanding project/process stakeholders including actions to ensure the success of the project or initiative

Supplier – any person or organization that provides an input to a process, a process may have both internal and external Customers

Swimlane Map – a process map that separates and defines process steps by the function, department or individual responsible for performing each process step; see Cross-Functional Process Map



Systems Thinking – a way of thinking about, and a language for describing and understanding, the forces and interrelationships that shape the behaviour of systems; helps to see how to change systems more effectively, and to act more in turn with the natural processes of the system

Takt Time – a measure of the pace of production in a process, the average time it takes to complete production of one unit, used to determine whether or not a process is capable of meeting Customer demand; calculated by dividing the net time available (minutes of work/day) by the Customer demand (units required/day)

Time & Motion Study – a systematic observation, analysis and measurement of the specific steps in the performance of a specific activity or process for the purpose of improving the process and increasing process productivity

To-Be Process – see Future State

Total Productive Maintenance (TPM) – a holistic approach to equipment maintenance that strives to achieve perfect production with no breakdowns, no stops or slow running and no defects while operating in a safe environment with no accidents, emphasizing proactive and preventative maintenance to maximize the operational efficiency of equipment, blurring the lines between operations and maintenance by placing a strong emphasis on empowering operators to help maintain their equipment

Transportation – process waste; any unnecessary movement and transportation of products, materials or equipment

Upstream - refers to any process steps or activities that occur before a given process step

Value - the definition of what a Customer is willing to pay for, often subjective

Value Added (VA) Activity – process steps that add value to the product or service, anything that changes the fit, form or function of the person or thing moving through the process; anything the Customer is willing to pay for

Value Added Time (VAT) – the amount of time it takes to complete the Value Added Activities in a process

Value Stream – the process flow which applies value to raw materials; culminates in a product or service for a Customer

Value Stream Mapping (VSM) – a process mapping technique used to graphically describe the value stream facilitating improved process performance

Variance – a measure of the spread of the values in a dataset, calculated as the average of the squared differences from the Mean

Variation - a measure that describes how consistent a process input or output is

Visual Management – the placement of tools, materials and/or information in plain view in a central location using simple tools so that status of a process or product can be easily and immediately understood



Voice of the Customer (VOC) – data that represents the wants and needs of the Customers of a process; collected through surveys or interviews with the Customers

Waiting - process waste; waiting to execute the next process step, process delays waiting for inputs

Waste - refers to any process step that does not add value from the Customer's perspective; see Muda

Waste Walk – an intentional visit to a workspace or process to observe and identify the 8 Wastes in the process to discover and prioritize process improvement opportunities

White Belt – the basic level of Lean Six Sigma certification, a professional who understands basic concepts of Lean Six Sigma but does not directly participate in lean process transformation initiatives

Workload Balancing – the practice of balancing or leveling work rates across process steps to effectively match Customer Demand or Takt Time

Yellow Belt – the fundamental level of Lean Six Sigma certification, a professional who understands basic concepts of Lean Six Sigma and participates in lean process transformation initiatives