

## GLOSSARY OF TERMS

Glossary terms with the word “tool” indicates that a tool exists within this toolbox which details the purpose, process, examples, and key points of that tool.

**Action Plan** (tool): A detailed graphical representation that documents and organizes schedules, events, activities, and responsibilities necessary to complete a project or to implement a process improvement.

**Activity**: One specific action or operation, composed of tasks, which are a factor in a process. A series of activities comprise a process.

**Activity Chart**: An input/output process chart which identifies suppliers, resources needed to perform each activity within a process, outputs generated by each activity, recipients (customers) for the outputs, and identifies potential problems occurring in each activity.

**Affinity Diagram** (tool): A method used to organize a large number of ideas or information into manageable groupings of those ideas or information.

**Appraisal**: Action to detect defects in a product or process.

**Attribute Data**: Data used in control charts that have specific attributes that delineates that data.

**Bar Chart** (tool): A graphic representation useful in comparing quantities. It consists of a series of bars uniform in width, but with different heights proportional to the sizes of different related data.

**Benchmarking** (tool): A continuous process by which organizations compare their performance in key areas with that of other organizations, especially those that have a reputation of being the best in a particular area of interest.

**Boundaries**: The natural limits of a process, defined as where the process begins and where it ends.

**Brainstorming** (tool): A technique used to quickly generate a list of ideas by a team to solve problems or issues. It is used by a team or group to increase creativity and idea generation in a very short amount of time by focusing on the quantity, not quality, or ideas.

**Cause and Effect Diagram** (tool): A graphic illustration of the relationship between a given outcome and all of the factors that work together to produce the outcome. Also known as a Fishbone Diagram or Ishikawa Diagram.

**Charts:** Graphic presentation of data.

**Checklist** (tool): A listing of items remaining to be completed or done prior to the end of an event, step, or process.

**Check Sheet** (tool): A simple form on which data can be recorded in a uniform manner as the data is collected.

**Consensus Building** (tool): A method of developing proposals acceptable enough that all team members can support the proposals.

**Continuous Process Improvement:** A step-by-step method used within the Department of Transportation to improve efficiency and employee involvement. This method enables managers to lead and teams by using a systematic approach to increase efficiency and effectiveness by developing and improving business practices and processes.

**Control Chart** (tool): A simple statistical tool, based on historical process data, which monitors variation within a process.

**Cost/Benefit Analysis** (tool): A process used to estimate the economic factors over the life of a process, solution, or item of equipment.

**Cost of Quality:** Activities or tasks which are not required to perform the mission or purpose of a work unit, but deal with preventing defects and correction of product or process failures.

**CPI:** See Continuous Process Improvement.

**CPI Guide:** A guide developed for use within the Department providing a technique of continuous process improvement. This guide supplies a step-by-step systematic approach to improve efficiency and employee involvement as part of an overall goal of developing and improving business practices and processes.

**CPI Process:** A ten step process detailed in the Department's CPI Guide that carries the manager or team through a systematic approach to process improvement.

**Criteria Rating Form** (tool): A form used in the decision making process to weigh alternative solutions to an agreed on issue. The form is used to rate those alternative solutions against each other to determine the best solution based on the criteria selected.

**Customer:** The person or organization receiving the output of a process or subprocess. The person or organization which validates requirements for goods or services. The person or organization for whom the process exists. There are two types of customers, internal (part of the same organization either inside or outside the same work unit) or external (not part of the same organization).

**Decision Matrix (tool):** A chart used to evaluate several recommended process improvements, activities, or courses of action. It is used by a team to analyze the pros and cons of each recommended solution against criteria selected by the team.

**Detection:** Practices to ensure goods or services conform to valid requirements by detecting defects. Detection means include inspection, review, appraisal, checking, or testing.

**Effectiveness:** Meeting agreed-upon requirements for supplier inputs and customer outputs. The customer determines the requirements that determine effectiveness. Sometimes referred to as doing the RIGHT things.

**Efficiency:** Minimizing time or other resources spent on activities which do not add value to the product or process. Sometimes referred to as doing things the RIGHT way.

**External:** Outside the boundaries of the process.

**Facilitator:** The individual responsible for coaching and coordinating employee participation activities such as CPI Teams.

**Failure:** When a process does not yield a product or service that meet valid requirements, resulting in a need for defect correction. Defect correction includes plan revisions, rewriting, field engineering changes, emergency equipment repairs, or process modification.

**Fishbone Diagram:** A graphic illustration of the relationship between a given outcome and all of the factors that worked together to produce the outcome. See Cause and Effect Diagram tool.

**Flow Chart (tool):** A visual graphic presentation showing all the inputs, activities, decision points, and outputs of a given process.

**Force Field Analysis (tool):** A method of analyzing, organizing, and displaying elements which resist change and elements which push for change toward a desired state.

**Gantt Chart** (tool): A chart used to document what is to be accomplished, persons involved, and each step required. It is used in the implementation of a new project or process.

**Group Dynamics:** Interpersonal exchanges and processes that take place among members of a team or group.

**Histogram** (tool): A chart which displays the spread or distribution of data that can be measured but not easily categorized. Categories used are merely ranges of data.

**Inputs:** Things and information needed to perform an activity or process. Time, materials, resources, equipment, parts, people, procedures, instructions and data are examples of inputs.

**Internal:** Within the boundaries of a process.

**Interview** (tool): A structured technique for gathering data or information from groups or individuals.

**Ishikawa Diagram:** A graphic illustration of the relationship between a given outcome and all of the factors that worked together to produce the outcome. See Cause and Effect Diagram tool.

**Life Cycle Cost:** The sum of all the expenses associated with a process or equipment over the whole life of the process or equipment in question. It includes such items as purchase price, installation costs, utility costs to run the equipment, personnel costs to operate the equipment or process, maintenance costs until scrapped, cost of capital, and cost of modifications during the life of the item.

**Line Chart** (tool): A graphic representation of data useful in comparing quantities or trends. It is made up of a series of data points along a line usually representing time.

**List Reduction:** See Multivoting Tool or Weighted Voting Tool.

**Lower Control Limit:** LCL is that point in a control chart which lies three standard deviations below the mean of values. Is normally used to describe values that lie outside the normal lower limits of values. See the Control Chart toolbox item for the appropriate formula.

**Management Presentation Checklist** (tool): A checklist of key points to remember and perform to ensure the successful “selling” of ideas to the process owner or others in the decision-making process.

**Mean:** The average value of a set of numbers. Is equal to the sum of all values divided by the number of values.

**Median:** The value that lies at the midpoint of a set of values ranked in order of size.

**Mission:** A brief statement of the processes or products a work unit is expected to perform as part of a larger work unit, or for its customers.

**Mode:** The value in a set of values that occurs most frequently

**Multivoting** (tool): A list reduction technique used to cut down a large list of items to a manageable few. It is often used to decrease the number of items identified during a brainstorming session.

**NGT:** See Nominal Group Technique.

**Normal Distribution:** The bell shaped distribution of a histogram that displays a descending array of data points on either side of the peak data.

**Nominal Group Technique** (tool): A form of brainstorming used to produce and prioritize a large number of ideas developed during an idea generation session.

**Outputs:** Products, services or information which are the end result of a process.

**Pareto Chart** (tool): A form of bar chart which ranks data in descending order. It is used to identify which problem or process should be addressed first. It quantifies either a problem or components of that problem.

**Pie Chart** (tool): A chart used to show the relationship of each part of a single product or process. It is a simple means of showing the relative values of the whole visually.

**Prevention:** Action to ensure quality is built into a product or service.

**Problem Solving Process:** A process used to solve problems. There are any number of models used by teams and managers to solve problems. One model suggests (1) identify the problem, (2) analyze the current situation, (3) identify the potential root causes, (4) identify possible solutions, (5) select the solution, (6) measure the results of change, and (7) standardize the revised process.

**Process:** A series of tasks or activities which converts inputs into outputs. A method of performing a series or activities or operations which produce a product or service.

**Process Owner:** That individual manager or supervisor with the authority to change, modify, or eliminate a process. The manager or supervisor should have the ability to delegate to the team the authority (within identified boundaries) to make those changes in a process.

**Productivity:** A measure of output compared to input. It is normally used as a measure of the efficiency of the utilization of various resources (namely personnel or machines). In a team setting, the goal is to “work smarter, not harder” but does not include working faster. Gains in productivity usually include improved work processes, reduction of errors and increased output without increased input of resources.

**Required:** Activities or tasks essential to accomplish the mission of a work unit or to produce outputs conforming to the customer’s valid requirements.

**Root Cause Analysis** (tool): An activity utilized to determine the root or basic cause of any problems or activity being reviewed.

**Run Chart** (tool): A simple version of a single line chart used to determine the long range average of process indicators that change, or that new trends are developing.

**Sampling** (tool): The selection and measurement of persons, objects, or events that will allow an estimate of the value of the measured characteristics for the entire population.

**Scatter Diagram** (tool): A graphic representation of the relationship between two variables. It is used to show if there is a relationship or correlation between two variables.

**Special Cause:** Cause not normally part of a process which creates process variation, generally forcing the process out of control. Any abnormal unpredictable variation.

**Standard Deviation:** A calculated process measurement permitting identification of variation within a process as the effect of a system/random cause or special/assignable cause. See the Control Chart toolbox item for the appropriate formula.

**Statistics:** The measurement of characteristics that are obtained from a sample and used to estimate the values for the population.

**Stratification:** The process of dissecting an issue or problem and examining each piece separately. The problem or issue in question may only be present in one or more distinct pieces and not the whole population.

**Supplier:** The person or organization providing inputs used by another person or organization.

**Survey** (tool): A structured method of obtaining data and measuring performance of a workgroup or to gauge customer satisfaction of a product or service.

**SWOT Analysis** (tool): **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats. SWOT consists of an external scan to identify the major threats and opportunities facing an organization, and an internal assessment conducted to examine the strengths and weaknesses of an organization.

**Task:** The smallest measurable unit of work. A series of tasks forms an activity and a series of activities forms a process.

**Team Leader:** A leader that directs and controls the activities of a team. Normally an initial team leader is selected by the process owner or supervisor that has the authority to make process changes. Team leadership may rotate among members or delegated to a single team member after the team has developed its own dynamics.

**Trend Chart** (tool): A chart used to graphically display data over time. Like the run chart it measures quantities, events and other measures over periods of time.

**Upper Control Limit:** UCL is that point in a control chart which lies three standard deviations above the mean of values. Is normally used to describe values that lie outside the normal upper limits of values. See the Control Chart toolbox item for the appropriate formula.

**Valid requirements:** Requirements that meet the needs of the customer that are current, realistic, understandable, measurable, and compatible with other valid requirements.

**Value Added:** Activities or tasks essential to accomplish the mission of a work unit or to produce outputs conforming to the customer's valid requirements.

**Value Added Analysis** (tool): A process by which an organization examines a process to insure that all steps in the process are necessary and contribute value to the end product or service.

**Variable Data:** Data used in control charts with variable measures in that data.

**Variation:** Periodic or sporadic changes or deviations within a process.

**Weighted Voting** (tool): A means of quantifying various alternatives developed by a team. Like multivoting, it helps reduce a larger list of alternative to a smaller list. It allows team members to "weight" what they consider most important.

**Why Technique** (see Root Cause Analysis Tool): One of the techniques used in root cause analysis. It asks why an activity or problem exists until the root cause of the issue is discovered.