The Ultimate Quality Management Glossary

150 Essential Quality Management Terms and Definitions

The perfect go-to guide for every quality professional - find a comprehensive mix of quality management basic definitions, as well as images depicting some key visual terms. Perfect eBook for the new quality manager, or to utilize in new employee training!
1. **5 Whys** A method to finding the root cause that underlies a particular problem. It encourages the troubleshooter to look beyond ostensible reasons for defects and follow the chain of causality until the underlying cause is identified. The “5” whys is just a rule of thumb – it may take less than five questions to get to the root of a problem.

2. **Acceptable Risk** Per your organization’s health and safety policy, a specific risk is acceptable if it has been reduced to a level that the organization can absorb into current operations. No treatment is considered possible, useful or necessary.

3. **Adverse event** Term used in the healthcare industry to describe a change or event that is not consistent with the desired or usual outcome.

4. **Affinity Diagram** Facilitates organization and consideration of a group of ideas of a particular issue through a consensus decision within a team. They are used to organize verbal information into some type of visual pattern, and starts with specific ideas to help work toward broad categories. It can also help organize and give structure to a list of factors that contribute to a problem, or identify key areas where improvement is most needed within an issue.

5. **Alignment** Actions to ensure that a process or activity supports the organization’s strategy, goals and objectives.

6. **Andon** A system incorporating signal lights used in manufacturing settings to notify employees of a quality or process problem. The alert may be activated manually by a worker using a pull cord or button, or may be activated automatically by the production equipment itself.

7. **ANSI - American National Standards Institute** A private, nonprofit organization that promotes and facilitates voluntary consensus to standards and conformity assessment systems. It is the U.S. member body of the International Organization for Standardization (ISO). It oversees the creation and use of thousands of norms and guidelines and accredits programs that assess conformance to standards.
8. **ANSI/AIHA Z10-2005** A regulatory standard from the American Industrial Hygiene Association developed to help companies create and maintain occupational, health and safety management systems. The standard emphasizes continual improvement and systematically eliminating the underlying root cause of deficiencies.

9. **APQP - Advanced Product Quality Planning** A quality process used for developing products, initially developed in the automotive industry. Its purpose, according to the Automotive Industry Action Group, is “to produce a product quality plan which will support development of a product or service that will satisfy the customer.” The process focuses on devising quality plans and on gathering customer feedback to use as actionable information.

10. **AS/NZS 4360** Australian standard that prescribes a seven-step process for performing risk management and embedding risk management into company culture.

11. **ASQ - American Society for Quality** A professional, nonprofit association that develops, promotes and applies quality related information, technology and training for quality practitioners, professionals from various industries, and everyday consumers. ASQ has more than 100,000 individual and organizational members.

12. **Assessment** A systematic process of collecting and analyzing data to determine the current, historical or projected compliance of an organization to a regulation or standard. Assessments help companies measure the effectiveness of a quality system.

13. **Audit** The assessment, inspection, or examination of a quality system to determine compliance to requirements. Performed onsite, an audit can apply to an entire organization or a specific function, process or production step.

14. **Autonomation** A feature of machine design that transfers some kind of human intelligence to automated machinery, so that machines are able to detect production defects and stop themselves so that problems can be addressed as they occur rather than pushing them on down the line to be addressed later. This approach eliminates overproduction, prevents defects, and focuses attention on understanding the problem at its source and preventing its recurrence.

15. **Basel II** An international initiative that requires financial services companies to have a more risk sensitive framework for the assessment of regulatory capital requirements. It aims to improve the consistency of capital regulations internationally, make regulatory capital more risk sensitive, and promote enhanced risk management practices among large, internationally active banking organizations.
16. **Benchmarking** An improvement technique by which a company compares itself against best-in-class competitors. This involves determining how best-in-class companies achieve their performance levels and using that information in improving its own performance.

17. **Best practice** A method or practice of performing a business process that is considered to be the best way to improve an organization’s performance.

18. **Brainstorming** A group process used to generate ideas within a group or team in a nonjudgmental environment. Team or group members are presented with an issue and are asked to be broad in their thinking about the issue at hand, and requested not to criticize the thoughts of others. The purpose of brainstorming is to generate a great deal of ideas about a central issue, and team members can interact with each other to generate further ideas within a single brainstorming session.

19. **Breakthrough improvement** A dynamic, decisive movement to a new, higher level of performance.

20. **BS8800** British standard that offers a framework for organizations to manage occupational, health and safety practices. It outlines strategies for minimizing risk of workplace incidents and improving business performance.

21. **Calibration** Comparison of an instrument to a standard of known accuracy to determine whether the instrument’s performance varies from the required specifications.

22. **Cause and Effect Diagram** Also known as an *Ishikawa Diagram* or a *Fishbone Diagram*, illustrates the relationship between an outcome and all influencing factors of the outcome. This diagram displays the factors that are thought to affect a particular output or outcome in a system - factors are often shown as groupings of related sub factors that act in concert to form the overall effect of the group displayed in the diagram. The Cause and Effect Diagram should be used to identify potential causes of a problem or issue in an orderly way, and can help answer questions such as "Why is our environmental quality management system suddenly producing so much waste?"

23. **CCM – Concern and Complaint Management** The business processes involving the recording and resolution of issues arising post-production.
24. **Certificate of compliance** A written statement, generally given by a quality management department, which states that the product being shipped meets the customer’s specifications.

25. **Certified quality improvement associate (CQIA):** An ASQ certification provided to those who have passed a test confirming their knowledge of quality tools and their uses.

26. **Change management** The process of requesting, evaluating, planning and implementing change to a system or aspect of a business. It involves the processing of changes and enabling traceability of the change process.

27. **Check Sheets** Forms used to record the frequency of specific events during a data collection period. It is a simple form that quality managers can use to collect data in an organized matter and easily convert it into useful information quickly.

28. **CI - Continuous Improvement** The ongoing improvement of products, services, environment, functions, communications and processes. This involves adopting new activities and eliminating those which do not add value. The goal is to increase effectiveness by reducing inefficiencies and waste.

29. **Complaint tracking** The process of collecting customer complaint data, disseminating data to appropriate parties for investigation, resolution, monitoring progress, and communicating results.

30. **Compliance (regulatory)** The act of conforming to prescribed specifications, regulations, or standards.

31. **Conformance** See Compliance (regulatory).

32. **Control Charts** Used to measure sequential or time-related process performance and variability, such as quality control in manufacturing. Control charts utilize a variety of concepts - a typical

![Control Chart Sample](image-url)
chart contains a centerline, which represents the average value of the quality characteristic corresponding to the in-control state of data represented. The upper and lower control limits are drawn above and below the centerline, which are chosen so that when a process that is seen as “in control” is graphed, the sampling points are seen as falling between them. Control Charts may indicate an out-of-control condition, either when plotted points fall above or below the set control limits or when the points display some pattern of behavior.

33. **Control plan** Written descriptions of an organization’s systems that control part and process quality by addressing the key characteristics and engineering requirements. The plan is to control the product characteristics and the associated process variables to ensure capability (around the identified target or nominal) and stability of the product over time.

34. **Corrective action** Steps that are taken to remove the cause or causes of an existing nonconformity or other undesirable situation in the form of a problem solving process. Can be done manually, or within [CAPA software](#).

35. **COSO ERM** A framework developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and Price Waterhouse Coopers that helps organizations identify, assess, and manage risk.

36. **Cost of Quality** Methodology that allows an organization to determine potential cost savings when process improvements are implemented. It helps quality managers determine the extent to which an organization’s resources are expended on activities preventing poor quality. Cost of Quality can also be assessed by viewing prevention costs, appraisal costs, internal and external failures. It is an important communication tool that describes the long-term impact of quality effort within a specific organization. Once a quality cost system is established, it should dynamically have positive impacts on the organization’s mission, objectives, and goals.

37. **Critical Processes** Processes that present serious potential dangers to human life, health and the environment or that risk the loss of significant sums of money or customers.

38. **Customer-supplier partnership:** A long-term relationship between a buyer and supplier characterized by teamwork and mutual confidence. The supplier is considered an extension of the buyer’s organization. The partnership is based on several commitments. The buyer provides long-term contracts and uses fewer suppliers. The supplier implements quality assurance processes so incoming inspection can be minimized. The supplier also helps the buyer reduce costs and improve product and process designs.

39. **CRM - Customer Relationship Management** A software system used to organize information about customers and prospective customers.

40. **Defect** A product’s or service’s nonfulfillment of an intended requirement or reasonable expectation for use, including safety considerations. There are four classes of defects which pertain to the level of issues caused by the defect.
41. **Deming Cycle**  A continuous quality improvement model popularized by statistician Edward Deming. Also known as the PDCA Cycle, the model consists of four repetitive steps: Plan, Do, Check, and Act, in order to drive continuous improvement.

42. **DHF - Design History File**  A documentation artifact used in the medical device industry. It is a compilation of records which describes the design history of a finished device including the design activities used to develop the device, accessories, major components, labeling, packaging and production processes. A DHF is required for each type of device or family of devices that are manufactured according to one DMR.

43. **DHR - Device History Record**  FDA requirement for medical device manufacturers. The DHR should reflect that all operations, processes, etc., described in the master record have been accomplished for all finished devices manufactured and includes: date(s) of manufacturing, quantity manufactured, quantity released for distribution, any device identification(s) and control number(s) used, the primary identification label and labeling used for each production unit, and, the acceptance records which demonstrate the device is manufactured in accordance with the DMR.

44. **DMR - Device Master Record**  A compilation of records containing the device specifications, production process specifications, quality assurance procedures and specifications, packaging and labeling specifications and installation, maintenance, and servicing procedures and methods.

45. **Document control**  A system of managing, distributing, and controlling documents.

46. **Downtime**  Lost production time during which a piece of equipment is not operating correctly due to breakdown, maintenance, power failures or similar events.

47. **ECO - Engineering Change Order**  A document requesting changes or improvements to a product or process.

48. **ECR - Engineering Change Request**  A request to an Engineering department for a change to a product design or an improvement to a process.

49. **EH&S - Environmental, Health and Safety**  An area concerned with the impact of the workplace on employees, customers, suppliers, and the environment.
50. **EMI - Enterprise Manufacturing Intelligence** A centralized approach to gathering information about manufacturing processes and using them to formulate strategies and standardized responses.

51. **Environmental aspects** An element of a facility’s activities, products, or services that interacts with the environment.

52. **Environmental impacts** Any adverse or beneficial change to the environment caused by a facility’s activities, products, or services.

53. **FDA 21 CFR Part 11** The FDA’s rule that defines the criteria under which electronic document management records and signatures are acceptable, i.e. equivalent to paper records.

54. **FDA 21 CFR Part 120** 21 CFR Part 120 is part of the US Food and Drug Administration's Code of Federal Regulations. It describes the applicability of Hazard Analysis and Critical Control Point (HACCP) Systems to any juice sold as such or used as an ingredient in beverages. See also HACCP.

55. **FDA 21 CFR Part 820 / Quality System Regulations** Describes current good manufacturing processes for the medical device industry. Intended to ensure that finished devices will be safe and effective for human use. Also known as the Quality System Regulation.

56. **Flowcharts** Graphic representations of the flow of processes. Flowcharts display the order of activities using shape visualizations that represent activities - the rounded rectangle indicates the beginning or end of a process, boxes indicate action items, and diamonds indicated decision points - all can be easily created, uploaded, imported and viewed within ISO compliance software. Flowcharts can be used to communicate the steps in a work process, identify areas that may be problem sources or improvement opportunities.

57. **FMEA - Failure mode effects analysis** A systematized group of activities to recognize, document and evaluate the frequency and severity of every possible failure of a product or process and its effects, and the identification and implementation of actions that could eliminate or reduce the occurrence of the potential failure.
58. **Gantt chart** A bar chart that displays planned work and finished work in relation to time. It typically displays the work breakdown, total duration needed to complete tasks, and the percent that has been completed.

59. **GFSI** The Global Food Safety Initiative is coordinated by CIES - The Food Business Forum, launched May 2000. The Global Food Safety Initiative (GFSI) is coordinated by The Food Business Forum CIES. This forum is a global food network made up of approximately 400 retailers and manufacturers worldwide.

60. **GMP - Good manufacturing practices** Requirements governing the quality procedures of FDA-regulated companies, including makers of foods, pharmaceuticals, and devices. An important aspect is the documentation of processes that enables traceability.

61. **GMS - Gage Management System** A system for monitoring, tracking, and calibrating gages.

62. **GR&R - Gage repeatability and reproducibility** A statistical tool that evaluates the effectiveness of a gauging instrument for a particular application. This is done by determining whether the measurements are repeatable (there is close agreement among a number of consecutive measurements of the output for the same value of the input under the same operating conditions) and reproducible (there is close agreement among repeated measurements of the output for the same value of input made under the same operating conditions over a period of time).

63. **GRC - Governance, Risk Management, and Compliance** A term that describes the integrated approach companies take to manage these three areas.

64. **HACCP** Hazard Analysis Critical Control Point - A quality management system for effectively and efficiently ensuring food and beverage control safety in the United States. HACCP-related regulations for various sectors are established by the Department of Agriculture and the Food and Drug Administration.

65. **Hazard Identification**: The process of recognizing a health and safety hazard exists and defining its characteristics.

66. **Hazard** Identified by Haddon as a potential source of bodily damage, hazards involve anything or any situation which may cause harm, injury or ill health to a person.

67. **HIPAA** The Health Insurance Portability and Accountability Act of 1996. Intended to streamline the conduct of electronic healthcare transactions. It also addresses the security and privacy of health data.

68. **Histograms** are bar chart representations used to plot the frequency with which different values of a given variable occur. Histograms evolved from a need to evaluate data that occurs at a
certain frequency, and are built to examine the characteristics of variation and are used as a
great visualization quality improvement tool for varying data. Histograms are used to identify
the range of variables, examine existing patterns, and to suggest a central tendency in these
variables.

69. IGOG - Incoming Goods/Outgoing Goods Control The quality assurance processes that surround
the receipt of materials and supplier goods and the output of finished products.

70. Inspection plan A plan that outlines inspection criteria, identifies the goals of the inspection,
specifies the methods to be taken, catalogues resources needed, and assigns responsibilities for
performing aspects of the inspection.

71. Inspection Plan Management (IPM) The implementation of strategies and processes for the
inspection of materials and goods.

72. Interested Party A person or group that has a stake in the OH&S performance of an
organization, from both inside and outside of the workplace. Interested parties may be directly
affected by the organization’s OH&S performance or actively concerned about it.

73. ISO 13485 A standard published in 2003 that outlines the requirements for a comprehensive
management system for the manufacturing of medical devices. It is based, in large part, on the
principles of ISO 9000.

74. ISO 14000 A standard related to how companies address environmental management issues.

75. ISO 14971 A standard that outlines risk management practices for medical device
manufacturers. Offers guidance for how to estimate and evaluate the associated risks, to control
these risks, and to monitor the effectiveness of the controls.

76. ISO 22000 ISO and its member countries used the Quality Management System approach, and
tailored it to apply to Food Safety, incorporating the widely used and proven HACCP principles
into the quality management system. The resulting standard is ISO 22000. Many companies will
find parts of this document very familiar. If your organization uses a HACCP system, you will be
building from that foundation. If your organization is ISO 9001 registered you will add HACCP
into that system.
77. ISO 9000 A family of international quality management standards maintained by ISO. The set of standards was developed to help companies document, monitor and improve their quality systems. ISO certification is administered by third-party registrars and certification bodies. Initially published in 1987, the standards underwent significant revision in 2000.

78. ISO/TS 16949 The automotive quality system standard that harmonizes the supplier quality requirements of the U.S., French, German and Italian automakers. It applies to the design, development, production, installation and servicing of automotive products.

J

79. Just-in-time A lean manufacturing technique that means having the right part at the right place in the right amount at the right time. It is intended to result in shorter cycle times, less inventory, low work-in-process (WIP), and streamlined workflow.

K

80. Kaizen The Japanese term that refers to continuous improvement, involving everyone at every level in an organization. The strategy involves cutting costs, reducing quality problems, and speeding delivery time.

81. Kanban A Japanese term for one of the primary tools of a just-in-time system. Kanban is a signaling device to trigger an action in order to maintain an orderly and efficient flow of materials in a manufacturing process. Kanban cards are the most common example of these signals.

82. Key product characteristic: A product or process perimeter characteristic that can affect safety or compliance with regulations, fit, function, performance or subsequent processing of product.

83. KPI - Key performance indicator A metric used to quantify a strategic performance objective for an organization.

L

84. Lean manufacturing A school of thought focused on eliminating waste in a manufacturing environment. Principles of lean manufacturing include optimum automation, just-in-time supplier delivery disciplines, quick changeover times, high levels of quality and continuous improvement.
85. **Lean Six Sigma** A business improvement methodology which combines aspects of Lean Manufacturing and Six Sigma. It emphasizes efficiency and improved quality.

86. **MES - Manufacturing Execution System** An integrated set of processing systems used to accomplish production. Can refer to software or a set of integrated functions within the manufacturing company.

87. **MOM - Manufacturing Operations Management** The methodology that emphasizes an integrated approach to streamlining manufacturing operations across a company or enterprise.

88. **Muda (waste)** A Japanese term for activities that are wasteful and do not add value. It is one of three terms (Muda, Mura, Muri) used frequently in the Toyota Production System to describe wasteful practices.

89. **Mura** A Japanese term for inconsistency or unevenness in an operation or work pace. It is one of three terms (Muda, Mura, Muri) used frequently in the Toyota Production System to describe wasteful practices.

90. **Muri** A Japanese term referring to the overburdening of equipment or operators. It is one of three terms (Muda, Mura, Muri) used frequently in the Toyota Production System to describe wasteful practices.

91. **Mutual recognition agreement (MRA)** A formal agreement providing reciprocal recognition of the validity of other organizations’ deliverables, typically found in voluntary standards and conformity assessment groups.

92. **NCMR - Nonconforming Material Report** A document describing a defective material, product, or part and how it is dispositioned

93. **Nonconformity** The deviation or nonfulfillment of a specified requirement.

94. **OCEG “Red Book”** A publication from the Open Compliance and Ethics Group that provides guidance for companies about the core processes of integrated governance, risk and compliance.

95. **OEM - Original equipment manufacturer** A company that uses product components or parts from a supplier company in order to build its own products.
96. **OH&S - Occupational Health & Safety** Cross-disciplinary area within an organization concerned with protecting the health, safety and welfare of people engaged in work or employment: the goal of OH&S programs is to foster a safe work environment.

97. **Occupational Health & Safety Management System (OHSMS):** System used to establish an OH&S policy and to manage OH&S risks. An organization’s OHSMS is one part of a larger management system.

98. **Occupational Health & Safety Objective:** OH&S objectives are OH&S performance goals that organizations set for themselves and wish to achieve. An organization’s OH&S objectives should be both measurable and consistent with its OH&S policy.

99. **Occupational Health & Safety Policy:** An organization’s OH&S policy statement expresses a commitment to the implementation and ongoing maintenance of its OHSMS and the improvement of its overall OH&S performance.

100. **OHSAS 18000** An international occupational health and safety management system specification. Designed to help companies identify and control OH & S risks.

101. **Pareto chart** A bar chart that displays the most important defects and their causes in descending order. It’s based on the principle that 80% of effects come from 20% of the possible causes.

102. **PAS 220** The ISO/TS 22002-1 is based on another technical specification, PAS 220. The PAS 220 is published by British Standards. It was developed to address concerns that the Global Food Safety Initiative (GFSI) had about adding the ISO 22000 standard to its list of benchmarked food safety standards. GFSI felt there was a need for more specific requirements for PRPs. The PAS 220 was developed to address this need. They benchmarked the registration scheme as FSSC 22000, which is a registration that requires compliance with both ISO 22000 and the PAS 220.

103. **Plan-do-check-act (PDCA) cycle** (See Deming Cycle) A four-step process for quality improvement. In the first step (plan), a way to effect improvement is developed. In the second
step (do), the plan is carried out, preferably on a small scale. In the third step (check), a study takes place between what was predicted and what was observed in the previous step. In the last step (act), action is taken on the causal system to effect the desired change. The plan-do-check-act cycle is sometimes referred to as the Shewhart cycle, because Walter A. Shewhart discussed the concept in his book Statistical Method From the Viewpoint of Quality Control, and as the Deming cycle, because W. Edwards Deming introduced the concept in Japan. The Japanese subsequently called it the Deming cycle. Also called the plan-do-study-act (PDSA) cycle.

104. **PLM - Product Lifecycle Management** The processes that govern the entire lifecycle of a product from its conception, through design and manufacturing, to service and disposal.

105. **Poka-yoke** A Japanese term that means "making fail-safe" or "mistake-proofing." It describes a method of preventing errors by putting limits on how an operation can be performed by the end user in order to force correct completion of the operation.

106. **Prevention versus detection** A term used to contrast two types of quality activities. Prevention refers to activities for preventing nonconformances in products and services. Detection refers to activities for detecting nonconformances already in products and services. Another phrase to describe this distinction is “designing in quality versus inspecting in quality.”

107. **Preventative or Preventive Action** Also thought of as a risk analysis process, these are steps that are taken to remove the causes of potential nonconformities or other undesirable situations that have not yet occurred. Preventive actions address potential problems.

108. **Process** A set of interrelated / interacting activities that transforms inputs into outputs.

109. **Production Part Approval Process (PPAP)** The process of approval for production parts, including production and bulk materials. The purpose is to ensure that suppliers comply with design specification and can perform consistently within the OEM’s quality system.

110. **Production Quality Management** The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer; operational techniques and activities that are used to fulfill requirements for quality. Also see Quality Control.

111. **Quality Control** The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer; operational techniques and activities that are used to fulfill requirements for quality. Also see Production Quality Management.

112. **Quality management** A planned, systemized set of
activities to ensure that products and processes meet customer requirements.

113. **Quality Management system** The processes used to design, manufacture and deliver products and services that meet customer requirements in accordance with company policy.

114. **Quality plan** Documentation that outlines the standards, quality processes and procedures related to a specific product, service, or project.

115. **Quality policy** An organization’s credo about its quality management practices and goals.

116. **Quality trilogy** A three-pronged approach to managing for quality. The three legs are quality planning (developing the products and processes required to meet customer needs), quality control (meeting product and process goals) and quality improvement (achieving unprecedented levels of performance).

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117. **Reliability** The probability that a product or part will adequately perform its purpose for a specific period of time in a specific set of conditions.

118. **Repeatability** The variation in measurements obtained when a person takes multiple measurements using the same equipment.

119. **Reproducibility** The variation that occurs when two or more people measure the same item using the same technique.

120. **Responsible Care** The chemical industry’s global voluntary initiative by which companies work to improve their health, safety and environmental performance, and to communicate with stakeholders about their products and processes.

121. **Return Material Authorization** A transaction by which the recipient of a product arranges to return defective goods to the manufacturer or supplier in order to have the product repaired or replaced.

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122. **Risk**: In general terms, the potential for loss. In a safety context, the likelihood that exposure to a hazard (see definition of “Hazard”, above) will result in death, injury or disease to a person or damage to property.

123. **Risk Assessment**: After a hazard is identified, an examination of the associated risk is completed determining likelihood of injury or illness being caused by the hazard. This can be conducted manually or with assistance of risk management software, and is evaluated by the organization to determine whether or not this risk is acceptable.

124. **Risk management** Performance of activities to mitigate the chance of adverse events. Activities include risk identification, assessment, prioritization and control.
125. **Root cause** An identified reason for a defect or nonconformance that, if eliminated, will prevent reoccurrence.

126. **Run Charts** Line graphs that show data points plotted in the order in which they occur. This chart is used to reveal trends and shifts in a process over time, show variation over time, or identifies an improvement or decline in a process over time. It examines both variables and attribute data. The run chart shows the history and pattern of variation, and can be used to summarize occurrences of a particular situation, identify trends or unusual events, display measurement results over time, or determine a common cause vs. special cause variation.

127. **Scatter Diagram** A chart in which one variable is plotted against another to determine whether or not there is a correlation between the two. Scatter Diagrams show pattern relationships between two quality and compliance variables that are thought to be related, and the purpose of this diagram is to demonstrate what happens to one variable when another is changed. Scatter Diagrams are used to plot the distribution of information in two dimensions, and are useful to rapidly screen for relationships between two variables.

128. **Seiban**: The name of a Japanese management practice taken from the words sei, which means manufacturing, and ban, which means number. A seiban number is assigned to all parts, materials and purchase orders associated with a particular customer job, project or anything else. This enables a manufacturer to track everything related to a particular product, project or customer, and facilitates setting aside inventory for specific projects or priorities. That makes it an effective practice for project and build-to-order manufacturing.

129. **SIPOC diagram**: A tool used by Six Sigma process improvement teams to identify all relevant elements (suppliers, inputs, process, outputs, customers) of a process improvement project before work begins.

![SIPOC Diagram](image)

**Figure 7 SIPOC Diagram**

methodology uses information and statistical analysis to identify and prevent defects.

130. **SMED - Single Minute Exchange of Die** A lean manufacturing technique for reducing tool changeover times in order to improve flow. It is also often referred to as Quick Changeover (QCO).

133. **SPC - Statistical process control** Confirmation by examination and provisions of objective evidence that the particular requirements for a specific intended use are fulfilled.

134. **SQF** Incorporates both HACCP and ISO processes into its certification standard. Safe Quality Food Certification. The SQF (Safe Quality Food) Program is a leading, global food safety and quality certification program and management system, designed to meet the needs of buyers and suppliers worldwide. The Program provides independent certification that a supplier’s food safety and quality management system complies with international and domestic food safety regulations. This enables suppliers to assure their customers that food has been produced, processed, prepared and handled according to the highest possible standards, at all levels of the supply chain.

135. **Supplier quality assurance** Confidence a supplier’s product or service will fulfill its customers’ needs. This confidence is achieved by creating a relationship between the customer and supplier that ensures the product will be fit for use with minimal corrective action and inspection. According to Joseph M. Juran, nine primary activities are needed: 1. define product and program quality requirements; 2. evaluate alternative suppliers; 3. select suppliers; 4. conduct joint quality planning; 5. cooperate with the supplier during the execution of the contract; 6. obtain proof of conformance to requirements; 7. certify qualified suppliers; 8. conduct quality improvement programs as required; 9. create and use supplier quality ratings.

136. **System** A set of interrelated / interacting processes.

137. **Takt time** The average time required to produce a unit of product for a given rate of demand. It is derived from the German word taktzeit which translates to cycle time.

138. **Throughput** The rate the system generates money through sales, or the conversion rate of inventory into shipped product.

139. **Total Quality Management** A comprehensive and structured approach to organizational management that seeks to improve the quality of products and services through ongoing refinements in response to continuous feedback.

140. **TPS - Toyota Production System** A manufacturing methodology developed by the Toyota Motor Company which falls under the larger umbrella of 'lean manufacturing.' According to Toyota, the Toyota Production System (TPS) was established based on two concepts: The first is called "jidoka"(which can be loosely translated as "automation with a human touch") which means that when a problem occurs, the equipment stops immediately, preventing defective products from being produced; The second is the concept of "Just-in-Time," in which each process produces only what is needed by the next process in a continuous flow.
141. **Type I error** An incorrect decision to reject something (such as a statistical hypothesis or a lot of products) when it is acceptable.

142. **Type II error** An incorrect decision to accept something when it is unacceptable.

**V**

143. **Validation** Confirmation by examination and provisions of objective evidence that the particular requirements for a specific intended use are fulfilled.

144. **Verification** Confirmation by examination and provision of objective evidence that specified requirements have been fulfilled.

**W**

145. **Waste** Any activity that consumes resources and produces no added value to the product or service a customer receives. Also known as muda.

146. **Weighed Voting** A way to prioritize a list of issues, ideas or attributes by assigning points to each item based on its relative importance.

147. **Work in process** Items between machines or equipment waiting to be processed.

148. **Working Sequence** One of three elements of standard work; refers to the sequence of operations in a single process that leads a floor worker to most efficiently produce quality goods.

149. **World-Class Quality** A term used to indicate a standard of excellence: best of the best.

**Z**

150. **Zero defects** A performance standard depicted by Crosby that aims to reduce defects in order to directly increase profits: it is the foundation of Six Sigma.
IBS can address quality system needs throughout the enterprise – from shop floor production equipment integration to business process workflow, inspections, audits and more.

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