Module 8
Section A: Quality

Term
Basic seven tools of quality (B7)

Module 8
Section A: Quality

Term
Cause-and-effect diagram

Module 8
Section A: Quality

Term
Check sheet

Module 8
Section A: Quality

Term
Cost of poor quality

Module 8
Section A: Quality

Term
External failure costs

Module 8
Section A: Quality

Term
Field service

Module 8
Section A: Quality

Term
Fishbone analysis

Module 8
Section A: Quality

Term
Fitness for use

A tool for analyzing process dispersion. It is also referred to as the Ishikawa diagram (because Kaoru Ishikawa developed it) and the fishbone diagram (because the complete diagram resembles a fish skeleton). The diagram illustrates the main causes and sub-causes leading to an effect (symptom).

Tools that help organizations understand their processes in order to improve them. The tools are the cause-and-effect diagram (also known as the fishbone diagram or the Ishikawa diagram), check sheet, flowchart, histogram, Pareto chart, control chart, and scatter diagram. Syn.: seven tools of quality. See: seven newer tools of quality.

The costs associated with performing a task incorrectly and/or generating unacceptable output. These costs would include the costs of nonconformities, inefficient processes, and lost opportunities. See: quality costs.

A simple data-recording device. [It] is designed by the user to facilitate the user's interpretation of the results [and] is one of the seven tools of quality. [It is] often confused with data sheets and checklists.

The functions of installing and maintaining a product for a customer after the sale or during the lease. [It] may also include training and implementation assistance. Syn.: after-sale service.

The costs related to problems found after the product reaches the customer. This usually includes such costs as warranty and returns.

A term used to indicate that a good or service fits the customer's defined purpose for that good or service.

A technique to organize the elements of a problem or situation to aid in the determination of the causes of the problem or situation. The analysis relates the effect of the environment to the several possible sources of the problem.

Module 8
Section A: Quality

Term
Five whys

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Module 8
Section A: Quality

Term
Flowchart

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Module 8
Section A: Quality

Term
Frequency distribution

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Section A: Quality

Term
Histogram

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Module 8
Section A: Quality

Term
Hoshin planning

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Module 8
Section A: Quality

Term
Intangible costs

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Module 8
Section A: Quality

Term
Internal customer

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Module 8
Section A: Quality

Term
Internal failure costs

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[A] chart that shows the operations, transportation, storages, delays, inspections, and so on related to a process. [This is] drawn to better understand processes [and is] one of the seven tools of quality. Syn.: flow diagram. See: block diagram, flow process chart.

A common practice in total quality management that involves asking “why” five times when confronted with a problem. By the time the answer to the fifth why is found, the ultimate cause of the problem is identified.

A graph of contiguous vertical bars representing a frequency distribution in which the groups or classes of items are marked on the x axis and the number of items in each class is indicated on the y axis. The pictorial nature of [this] lets people see patterns that are difficult to see in a simple table of numbers. [It] is one of the seven tools of quality.

A table that indicates the frequency with which data falls into each of any number of subdivisions of the variable. The subdivisions are usually called classes.

Those costs that are difficult to quantify, such as the cost of poor quality or of high employee turnover.

Breakthrough planning. A Japanese strategic planning process in which a company develops up to four vision statements that indicate where the company should be in the next five years. Company goals and work plans are developed based on the vision statements. Periodic audits are then conducted to monitor progress.

The cost of things that go wrong before the product reaches the customer. [These] usually include rework, scrap, downgrades, reinspection, retesting, and process losses.

The recipient (person or department) of another person’s or department’s output (good, service, or information) within an organization. See: customer, external customer.

Module 8
Section A: Quality

Term
Management by walking around (MBWA)

Module 8
Section A: Quality

Term
Nonevident failure

Module 8
Section A: Quality

Term
Pareto chart

Module 8
Section A: Quality

Term
Pareto's law

Module 8
Section A: Quality

Term
Prevention costs

Module 8
Section A: Quality

Term
Preventive maintenance

Module 8
Section A: Quality

Term
Process flow

Module 8
Section A: Quality

Term
Process flow diagram

Failure occurring in either a product or a production process that is not immediately evident. This may be indicative of a faulty design.

The management technique of managers touring a facility on a regular basis to talk with workers and staff about problems, trends, and potential solutions.

A concept developed by Vilfredo Pareto, an Italian economist, that states that a small percentage of a group accounts for the largest fraction of its impact or value. In an ABC classification, for example, 20 percent of the inventory items may constitute 80 percent of the inventory value. See: ABC classification, 80-20.

A bar graph that displays the results of a Pareto analysis. It may or may not display the 80-20 variation, but it does show a distinct variation from the few compared to the many.

The activities, including adjustments, replacements, and basic cleanliness, that forestall machine breakdowns. The purpose is to ensure that production quality is maintained and that delivery schedules are met. In addition, a machine that is well cared for will last longer and cause fewer problems. Syn.: periodic maintenance.

The costs caused by improvement activities that focus on the reduction of failure and appraisal costs. Typical costs include education, quality training, and supplier certification. [This is one of the] four categories of quality costs.

A graphical and progressive representation of the various steps, events, and tasks that make up an operations process. Provides the viewer with a picture of what actually occurs when a product is manufactured or a service is performed.

The sequence of activities that, when followed, results in a product or service deliverable. See: flow process chart, process chart.

Module 8
Section A: Quality

Term
Quality

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Module 8
Section A: Quality

Term
Quality assurance/control

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Module 8
Section A: Quality

Term
Quality costs

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Module 8
Section A: Quality

Term
Quality trilogy

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Module 8
Section A: Quality

Term
Robust design

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Module 8
Section A: Quality

Term
Scatter chart

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Module 8
Section A: Quality

Term
Seven new tools (N7)

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Module 8
Section A: Quality

Term
Total quality control (TQC)

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Two terms that have many interpretations because of the multiple definitions for the words “assurance” and “control.” For example, “assurance” can mean the act of giving confidence, the state of being certain, or the act of making certain; “control” can mean an evaluation to indicate needed corrective responses, the act of guiding, or the state of a process in which the variability is attributable to a constant system of chance causes. One definition of quality assurance is all the planned and systematic activities implemented within the quality system that can be demonstrated to provide confidence that a good or service will fulfill requirements for quality. One definition for quality control is the operational techniques and activities used to fulfill requirements for quality. Often, however, quality assurance and quality control are used interchangeably, referring to the actions performed to ensure the quality of a good, service, or process. See: quality control.

Conformance to requirements or fitness for use.

A three-pronged approach to managing quality proposed by Joseph Juran. 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). Syn.: Juran Trilogy.

The overall costs associated with prevention activities and the improvement of quality throughout the firm before, during, and after production of a product. These costs fall into four recognized categories: internal failure costs, external failure costs, appraisal costs, and prevention costs. Internal failure costs relate to problems before the product reaches the customer. These usually include rework, scrap, downgrades, reinspection, retest, and process losses. External failure costs relate to problems found after the product reaches the customer. These usually include such costs as warranty and returns. Appraisal costs are associated with the formal evaluation and audit of quality in the firm. Typical costs include inspection, quality audits, testing, calibration, and checking time. Prevention costs are those caused by improvement activities that focus on reducing failure and appraisal costs. Typical costs include education, quality training, and supplier certification. See: cost of poor quality.

A graphical technique to analyze the relationship between two variables. Two sets of data are plotted on a graph, with the y axis used for the variable to be predicted and the x axis used for the variable to make the prediction. The graph will show possible relationships (although two variables might appear to be related, they might not be—those who know most about the variables must make that evaluation). [This] is one of the seven tools of quality. Syn.: cross plot, scatter diagram, scatterplot.

Type of design for a product or service that plans for intended performance even in the face of a harsh environment.

The process of creating and producing the total composite good and service characteristics (by marketing, engineering, manufacturing, purchasing, etc.) through which the good and service will meet the expectations of customers.

A set of quality improvement tools developed by the Union of Japanese Scientists and Engineers (JUSE). The N7 are affinity diagram, interrelationship digraph, matrix diagram, tree diagram, prioritization matrix, process decision program chart, and activity network diagram. See: basic seven tools of quality.

Module 8

Section A: Quality

Term

Total quality management (TQM)

A management approach to long-term success through customer satisfaction; based on the participation of all members of an organization in improving processes, goods, services, and the culture in which they work.