**Quality** "the totality of characteristics of an entity that bear on its ability to satisfy stated or implied needs.” (International Organization for Standardization (ISO)).

“Conformance to requirements or fitness for use” which means that the product or services must meet the intended objectives of the project and have a value to the donor and beneficiaries and that the beneficiaries can use the material or service as it was originally intended.

**Elements of quality management**: quality planning, quality assurance, & quality control

**Quality management** is the process for ensuring that all project activities necessary to design, plan and implement a project are effective and efficient with respect to the purpose of the objective and its performance.

**Quality management** is a repetitive cycle of measuring quality, updating processes, measuring, updating processes until the desired quality is achieved.

**Project Quality Management** works to ensure that the project requirements, including product requirements, are met and validated.

**QM** focuses on improving stakeholder’s satisfaction through continuous and incremental improvements to processes, including removing unnecessary activities; it achieves that by the continuous improvement of the quality of material and services provided to the beneficiaries.

**Key Processes of Project Quality Management Quality Plan** involves identifying the quality requirements for both the project and the product and documenting how the project can show it is meeting the quality requirements. **Quality Assurance** is used to verify that the project processes are sufficient so that if they are being adhered to the project deliverables will be of good quality.

**Quality Control** verifies that the product meets the quality requirements. Acceptance decisions

Rework Process adjustments **Quality Improvements** It is the systematic approach to the processes of work that looks to remove waste, loss, rework, frustration, etc. in order to make the processes of work more effective, efficient, and appropriate.

**Types of Quality Characteristics Functionality:** is the degree, by which equipment performs its intended function. **Performance,** it’s how well a product or service performs the beneficiaries intended use. **Reliability,** it’s the ability of the service or product to perform as intended under normal conditions without unacceptable failures. Relevance, it’s the characteristic of how a product or service meets the actual needs of the beneficiaries, **Timeliness,** how the product or service is delivered in time to solve the problems when its needed and not after **Suitability,** defines the fitness of its use, it appropriateness and correctness. **Completeness,** the quality that the service is complete and includes all the entire scope of services. **Consistency,** services are delivered in the same way for every beneficiary.

**Framework for quality management plans includes four elements:** Quality Policy**,** Who is in charge? Where are we going? How are we going to get there?

**The Wheel of Quality** Customer focus, Variation, and Continuous improvement, showing the r/p and interactions among them.

**Quality management standards** are details of requirements, specifications, guidelines and characteristics that products, services and processes should consistently meet in order to ensure:

**Quality standards** are defined as documents that provide requirements, specifications, guidelines, or characteristics that can be used consistently to ensure that materials, products, processes, and services are fit for their purpose.

**Quality specifications** are detailed requirements that define the quality of a product, service or process. Quality includes tangible elements such as measurements and intangible elements such as smell and taste.  **Quality Assurance** focuses on the process of quality.

**QUALITY ASSURANCE** is the sum total of the organized arrangements made with the object of ensuring that products are of the quality required for their intended use. **Quality assurance** follows quality planning as the third stage in the five-stage project quality process model and runs largely parallel with project quality control. **Quality Assurance** is a process to provide confirmation based on evidence to ensure to the donor, beneficiaries, organization management and other stakeholders that product meet needs, expectations, and other requirements. **Quality assurance** occurs during the implementation phase of the project and includes the evaluation of the overall performance of the project on a regular basis to provide confidence that the project will satisfy the quality standards defined by the project.

**Quality Journey: Quality Assurance Activities**

Customers Requirements Specifications QA Activities

**Project management benchmarking** is the process of continuously comparing the project management practices of your organization with the practices of leaders anywhere in the world; its goal is to gain information to help you improve your own performance. **Benchmarking** generates ideas for quality improvements by comparing specific project practices or product characteristics to those of other projects or products within or outside the performing organization.

**Quality audits** are structured reviews of the quality management activities that help identify lessons learned that can improve the performance on current or future project activities.

**A quality audit** is a structured, independent review to determine whether project activities comply with organizational and project policies, processes, and procedures.

**Assurance Vs Control**

**Quality assurance** is often confused with quality control; quality control is done at the end of a process or activity to verify that quality standards have been met. **Quality control** by itself does not provide quality, although it may identify problems and suggest ways to improving it.

**Quality control** addresses the outcomes; it is about monitoring performance and doing something about the results**. Q. Control:** refers the set of objectives, tools, performance measures, systems that organizations use to guide and motivate all employees to achieve organizational objectives.

**Process of control Planning: 1.** set objectives, activities and measures of evaluation. **2.** Execution: implementation **3.** Monitoring: measuring current level of performance **4.** Evaluation: comparison **5.** Correcting: actions. **Tools for Managing Project Quality** Collecting data, Understanding data, Understanding processes, Analyzing processes, Solving problems**. Tools of quality Control**

***Check sheet, Graph, Histogram, Pareto chart, Scatter diagram, Control chart Cause and effect diagram* DMAIC** is a systematic, closed-loop process for continued improvement that is scientific and fact based. **D**efine: Define the problem/opportunity, process, and customer requirements. **M**easure: Define measures, then collect, compile, and display data. **A**nalyze: Scrutinize process details to find improvement opportunities. **I**mprove: Generate solutions and ideas for improving the problem. **C**ontrol: Track and verify the stability of the improvements and the predictability of the solution. **Outputs of quality control Acceptance, Rework, Adjustments Quality Assurance>-** Activities to ensure quality **Quality Control** Monitoring and maintaining the quality **Quality Management** Handling and monitoring of activities throughout the implementation period.

**Quality improvement** the organized creation of beneficial change; the attainment of unprecedented levels of performance…breakthrough.”

 **Quality improvement** is a deliberate process that uses objective measurement and data. All **Quality improvement** begins with data collection. The Japanese word kaizen (meaning continual, incremental improvement) is widely used in quality related activities.

**Quality Improvement** is a formal approach to the analysis of performance and systematic efforts to improve it.

**Quality improvement -** a method for ensuring that all the activities necessary to design, develop and implement a product or service are effective and efficient with respect to the system and its performance.

**Common Quality Improvement Processes (tools) PDSA** (plan, do, study, act allows for integration of new and existing systems. Promotes small scale rapid cycle change over short periods of time. **Human Factors,** about how features of our tools, tasks, and work environments continually influence what we do and how we do it. **Lean Methodology,** Produce better outcomes for customers, Create more value with less wasted time, effort, and resources, Speed delivery while reducing cost, Lay less burden on the people doing the work.

**Root Cause Analysis,** is focus problem solving methods aimed at identifying the root causes of problems or events.Predicated on the belief that problems are best solved by attempting to correct or eliminate root causes, as opposed to merely addressing the immediately obvious symptoms, recognized that complete prevention of recurrence by a single intervention is not always possible., considered to be an iterative process, and is frequently viewed as a tool of continuous improvement**. 5S** is a ways of deciding what should be kept and where and how it should be stored, focuses on effective work place organization and standardized work procedures. , simplifies your work environment, reduces waste and non-value activity while improving quality efficiency and safety.

**Quality Improvement Processes**

* Identify an issue
* Build a team to address it
* Define the problem
* Choose a target
* Test the change
* Reconsider or extend the improvement efforts