**Definition of quality Control**

Quality management is a discipline for ensuring that outputs, benefits, and the processes by which they are delivered, meet stakeholder requirements and are fit for purpose.

**General**

Quality management has four components: **quality planning, quality assurance, quality control and continual improvement.** These include procedures, tools and techniques that are used to ensure that the outputs and benefits meet customer requirements.

The first component, **quality planning**, involves the preparation of a quality management plan that describes the processes and metrics that will be used. The quality management plan needs to be agreed with relevant stakeholders to ensure that their expectations for quality are correctly identified. The processes described in the quality management plan should conform to the processes, culture and values of the host organisation.

**Quality assurance** provides confidence to the host organisation that its projects, programmes and portfolios are being well managed. It validates the consistent use of procedures and standards, and ensures that staff have the correct knowledge, skills and attitudes to fulfil their project roles and responsibilities in a competent manner. Quality assurance must be independent of the project, programme or portfolio to which it applies.

The next component, **quality control**, consists of inspection, testing and measurement. It verifies that the deliverables conform to specification, are fit for purpose and meet stakeholder expectations.

Quality control activities determine whether acceptance criteria have, or have not, been met. For this to be effective, specifications must be under strict configuration control. It is possible that, once agreed, the specification may need to be modified. Commonly this is to accommodate change requests or issues, while maintaining acceptable time and cost constraints. Any consequent changes to acceptance criteria should be approved and communicated.

The last component, **continual improvement**, is the generic term used by organisations to describe how information provided by quality assurance and quality control processes is used to drive improvements in efficiency and effectiveness. A P3 maturity model provides a framework against which continual improvement can be initiated and embedded in the organisation.

**Project**

Projects that are part of a programme may well have much of the quality management plan developed at programme level to ensure that standards are consistent with the rest of the programme. Stand-alone projects need to develop their own quality management plans, either from scratch or by adapting those from other similar projects. This may seem to be an administrative burden at the beginning of smaller projects, but is always worthwhile in the end.

Projects deliver tangible outputs that are subject to many forms of quality control, depending upon the technical nature of the work and codes affecting particular industries. Examples of inspecting deliverables include crushing samples of concrete used in the foundations of a building; x-raying welds in a ship’s hull; and following the test script for a new piece of software.

Inspection produces data and tools such as scatter diagrams, control charts, flowcharts and cause and effect diagrams, all of which help to understand the quality of work and how it may be improved.

The main contribution to continual improvement that can be made within the timescale of a project is through lessons learned. Existing lessons learned should be consulted at the beginning of every project, and any relevant lessons used in the preparation of the project documentation. At the end of every project, the lessons learned should be documented as part of the post-project review and fed back into the knowledge database.

**Programme**

The responsibility of the programme management team is to develop a quality management plan that encompasses the varied contexts and technical requirements contained within the programme. This sets the standards for the project quality management plans and also acts as a plan for quality in the benefits realisation parts of the programme.

A comprehensive quality management plan at programme level can greatly reduce the effort involved in preparing project-level quality management plans.

Quality control of outputs is mainly handled at project level, but the programme may get involved where an output from one project is an input to another, or where additional inspection is needed when outputs from two or more projects are brought together.

The programme is responsible for quality control of benefits. This is a complex task since the acceptance criteria of a benefit may cover subjective as well as measurable factors but benefits should be defined in measurable terms so that quality control can be applied.

The typical scale of programmes means that they have a very useful role to play in continual improvement. Programme assurance will ensure that projects do take existing lessons learned into account and then capture their own lessons for addition to the knowledge database.

**Portfolio**

The very nature of a portfolio means that it is unlikely to need a portfolio quality management plan. Quality management for the portfolio should be indistinguishable from the quality management policies of the host organisation as a whole.

It may be necessary for the portfolio management team to provide guidance on the application of general policies or perhaps augment them where the portfolio creates special requirements.

The portfolio is responsible for delivering strategic objectives. These may be expressed in very broad terms resulting in difficulty in applying quality control. When establishing the scope of a portfolio, attention should be given to defining acceptance criteria for strategic objectives so that they can be quality controlled.

Continual improvement is very much a concern at portfolio level. The portfolio management team needs to ensure that the management of projects and programmes becomes more effective and efficient with the passage of time.