Crosswind Learning

Version 6.1 Updated for the 2021
Project Management Professional (PMP)® Exam

Crosswind Success Series: PMP® Exam Bootcamp Manual

www.crosswindpm.com
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Version 6.1 aligned with the Project Management Institute, *A Guide to the Project Management Body of Knowledge, (PMBOK® Guide)* - Sixth Edition, Project Management Institute Inc., 2017

Chapter 13

Project Quality Management

Project Quality Management entails meeting the stakeholders objectives by assimilating the organization's quality policy into the planning, management, and control of the project and project quality requirements. The specific approaches, tools, and techniques used are dependent on the type of deliverables the project will produce.

Project Quality Management also reinforces a continuous quality improvement culture.

The goal of the quality processes is to align them with the International Organization for Standardization (ISO). They should align with concepts created by Deming, Juran, and Crosby, as well as TQM (Total Quality Management), Six Sigma, FMEA (Failure Mode and Effect Analysis), VOC (Voice of the Customer), Continuous Improvement, and COQ (Cost of Quality).

Figure 13-1: Quality Management Process Interaction shows the three quality processes.

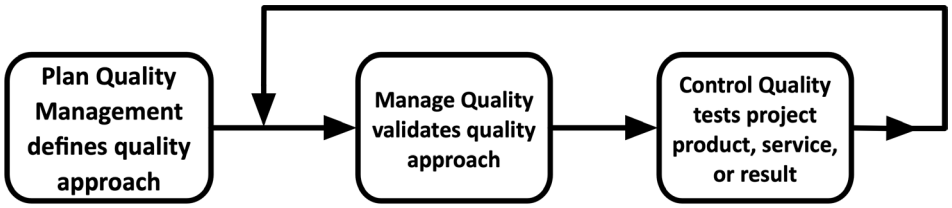

Figure 13-1: Quality Management Process Interaction

The source for the above figure is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Figure 8-1, Page 272

A memory tool for Quality is **PMC** (**P**lan Quality, **M**anage Quality, **C**ontrol Quality).

Trends

Selected quality approaches should reduce variances and produce results that meet requirements. They should emphasize customer satisfaction, continuous improvement, management responsibility, and, if applicable, a mutually beneficial relationship with suppliers.

Tailoring

Project tailoring, the manner in which processes of a knowledge area are exercised, is employed to address the distinctive nature of each project. Successful project tailoring is predicated on a careful consideration of:

- Policy compliance and auditing
- Standards and regulatory compliance
- Continuous improvement
- Stakeholder engagement

Agile/Adaptive Environment

Agile methods employ frequent quality and review events that occur throughout the project. Recurring retrospectives are used to examine the proficiency of the quality processes. If any issue is discovered, an analysis of the root cause is undertaken and new approaches may be employed on a trial basis. The new approaches are then evaluated during subsequent retrospectives. The goal of employing frequent quality and review events is to discover inconsistencies and issues early on, when the cost of change is less expensive.

The source for the above text is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Pages 271-276

In this chapter, we discuss the following:

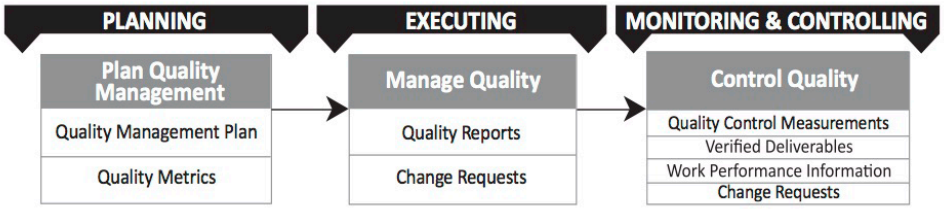

Figure 13-2: Quality Processes

The source for the above figure is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Figure 8-1, Page 272

☑	**Crosswind "Must Knows" for Project Quality Management**
	Key Inputs, Tools & Techniques, and Outputs for Plan Quality Management
	Key Inputs, Tools & Techniques, and Outputs for Manage Quality
	Key Inputs, Tools & Techniques, and Outputs for Control Quality
	Definition of quality
	Definition of Total Quality Management
	Continuous improvement concepts
	Definition of gold plating
	Differences between grade and quality, and how to apply them
	Differences between precision and accuracy
	Differences between prevention and inspection
	Cost of conformance and nonconformance
	Definition and application of Design of Experiments (DOE)
	Basics of Just-in-Time (JIT) inventory and that the amount of inventory needed is 0%
	The percentages of 1, 2, 3 and 6 sigma
	Basics of probabilities and concept that the sum of all possible probabilities must equal 1.0 (100%)
	The more recognizable proprietary quality management methodologies and when to apply them
	At what point the worker, the project manager, and senior management are all responsible for quality

	Principles of measuring a sample vs. the entire population
	Variables and attributes
	Statistical independence and mutual exclusivity
	Characteristics of a Pareto diagram
	Characteristics of a scatter diagram
	Principles and components of a control (run) chart including the upper and lower control limits, upper and lower specification limits, and the mean
	The characteristics of a cause-and-effect (Ishikawa/fishbone) diagram and the environment in which it is used

Although helpful, this list is not all-inclusive in regard to information needed for the exam. It is only suggested material that, if understood and memorized, may increase your exam score.

13.1. Definition of Quality

Quality is defined **as the degree to which a set of inherent characteristics fulfill requirements**. It's key to understand that stated (or implied) needs are used to generate project requirements. Generating the requirements is typically accomplished via stakeholder management by using key (influential) stakeholder wants, needs, and expectations to generate those requirements during the processes associated with project scope.

Crosswind also recommends familiarity with an older definition of quality: conformance to requirements and Fitness for Use.

13.2. Project Management and Quality Management

Project management and quality management should complement each other as they work together. Both focus on items such as customer satisfaction, management responsibility, continuous improvement, and prevention over inspection.

13.3. Total Quality Management (TQM)

Total Quality Management is a quality management philosophy conceived by **Dr. Deming** that approaches quality management proactively and applies statistical analysis as the basis for documenting improvement.

The philosophy espouses planning quality and testing throughout development rather than relying on inspections after completion of the work. Testing throughout development provides an immediate feedback loop so that process problems are likely to be detected early on, when less time and money are required to correct the problems.

W. Edwards Deming's 14 principles of management are considered the foundational basis for Total Quality Management. While knowing all 14 principles is not necessary for the exam, familiarity with the following points is important:

- Be proactive, not reactive
- Utilize leadership and accountability
- Measure improvement throughout the process, striving for continuous improvement
  Continuous process improvement is key to TQM.

13.4. Zero Defects

Zero Defects is a concept created by **Philip Crosby**. Its goal is to meet quality requirements the first time and every time. It emphasizes prevention over inspection (prevent problems rather than discover them during inspections that occur at the end of the process when correction is costlier in terms of time and cost).

13.5. Fitness for Use

The **Fitness for Use** concept was created by **Joseph Juran** with the primary goal of determining and satisfying the **real needs of the customer and stakeholders**.

13.6. Continuous Improvement (Kaizen)

Continuous Improvement takes a **proactive approach to development with the emphasis on making improvements throughout a process**. An example of process improvement is using automated shipping software instead of performing all shipping activities manually. This approach improves the shipping process by reducing the potential for error.

Unless there is a major environmental change, major process improvements are likely to occur at the beginning of an initiative with minor improvements occurring later.

Popular process improvement approaches include **Malcolm Baldrige**, **Organizational Project Management Maturity Model (OPM3)**, and **Capability Maturity Model Integration (CMMI)**.

13.7. Gold Plating

Gold plating is the practice of providing more than what the customer requested. This practice is unacceptable and professionally irresponsible. The project team is obligated to provide the product, service, or result that corresponds exactly to customer requirements.

An example of gold plating is including functionality in a software application that is not included in the finalized customer requirements.