

Presentation on Project Quality Management of the PMBoK-PMI(2017 edition)

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Project Quality Management(PQM)

PQM includes the **processes** for **incorporating** the organization's quality policy regarding:-

- Planning
- Managing
- Controlling

project and quality requirement in order to met **stakeholder's** objectives.

The PQM processes are:-

1. Plan quality management:

The process of identifying quality requirements and/or standards for the project and its deliverables, and documenting **how the project will demonstrate compliance** with quality requirements and/or standards.

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2. Manage quality:

The process of translating the quality management plan into executable quality activities that **incorporate** the organization's **quality policies into the project.**

Cont...

3. Control quality:

The process of monitoring and recording the results of executing the quality management activities to assess performance and ensure the project outputs are complete, correct, and meet customer expectations.

Cont...

Project Quality Management Overview

8.1 Plan Quality Management

- .1 Inputs
 - .1 Project charter
 - .2 Project management plan
 - .3 Project documents
 - .4 Enterprise environmental factors
 - .5 Organizational process assets
- .2 Tools & Techniques
 - .1 Expert judgement
 - .2 Data gathering
 - .3 Data analysis
 - .4 Decision making
 - .5 Data representation
 - .6 Test and inspection planning
 - .7 Meetings
- .3 Outputs
 - .1 Quality management plan
 - .2 Quality metrics
 - .3 Project management plan updates
 - .4 Project documents updates

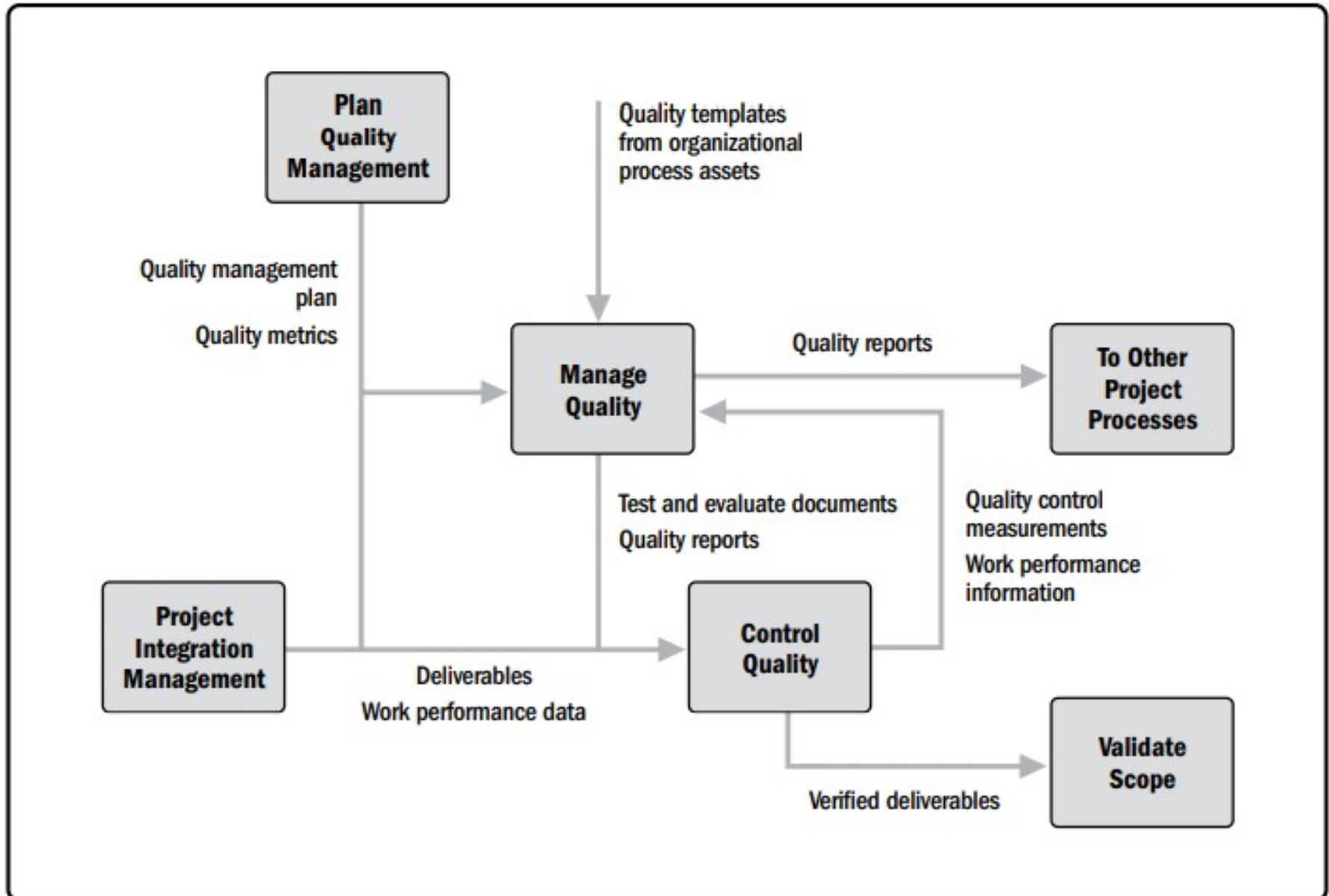
8.2 Manage Quality

- .1 Inputs
 - .1 Project management plan
 - .2 Project documents
 - .3 Organizational process assets
- .2 Tools & Techniques
 - .1 Data gathering
 - .2 Data analysis
 - .3 Decision making
 - .4 Data representation
 - .5 Audits
 - .6 Design for X
 - .7 Problem solving
 - .8 Quality improvement methods
- .3 Outputs
 - .1 Quality reports
 - .2 Test and evaluation documents
 - .3 Change requests
 - .4 Project management plan updates
 - .5 Project documents updates

8.3 Control Quality

- .1 Inputs
 - .1 Project management plan
 - .2 Project documents
 - .3 Approved change requests
 - .4 Deliverables
 - .5 Work performance data
 - .6 Enterprise environmental factors
 - .7 Organizational process assets
- .2 Tools & Techniques
 - .1 Data gathering
 - .2 Data analysis
 - .3 Inspection
 - .4 Testing/product evaluations
 - .5 Data representation
 - .6 Meetings
- .3 Outputs
 - .1 Quality control measurements
 - .2 Verified deliverables
 - .3 Work performance information
 - .4 Change requests
 - .5 Project management plan updates
 - .6 Project documents updates

Major PQM process interrelations



Quality Vs Grade

Quality

- Quality as a delivered performance or result is “the degree to which a set of inherent characteristics fulfil requirements”

Grade

- Grade as a design intent is a category assigned to deliverables having the same functional use but different technical characteristics.

Low grade Vs High grade

- While a quality level that fails to meet quality requirements is always a **problem**, a low-grade product may **not be a problem**. E.g.
 - It may not be a problem if a suitable **low-grade**(one with a limited number of features) is of **high quality** (no obvious defects).
 - It may be a problem if **a high-grade** product(one with numerous features) is of **low quality** (many defects).

Prevention Vs Inspection

- Prevention is preferred over inspection.
- Its better to design quality into deliverables, rather than to find quality issues during inspection.
- The cost of preventing mistakes is generally much less than the cost of correcting mistakes when they are found by inspection or during usage.

Statistical control process

- ❖ **Prevention**(keeping errors out of the process) and **inspection**(keeping errors out of the hands of the customer)
- ❖ **Attribute sampling**(the result either conforms or does not conform) and **Variable sampling**(the result is rated on a continuous scale that measures the degree of conformity)
- ❖ **Tolerance**(specified range of acceptance results) and **Control limits**(that identify the boundaries of common variation in statistically stable process or process performance).

Five levels of increasingly effective quality management:

- Usually, the most expensive approach is to **let the customer find the defects**. This approach can lead to warranty issues, recalls, loss of reputation, and rework costs.
- **Detect and correct the defects** before the deliverables are sent to the customer as part of the quality control process. The control quality process has related costs, which are mainly the appraisal costs and internal failure costs.

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- **Use quality assurance** to examine and correct the process itself and not just special defects.
- **Incorporate quality** into the planning and designing of the project and product.
- **create a culture** throughout the organization that is aware and committed to quality in processes and products

Trends in PQM

- **Customer satisfaction:** Understand, evaluate, define, and manage requirement so that customer expectations are met
- **Continual improvement:** The plan-do-check-act(PDCA) cycle is the basis for quality improvement.
- **Management responsibility:** Success requires the participation of all members of the project team.
- **Mutually beneficial partnership with suppliers:** The organization should prefer long-term relationships over short-term gains.

Tailoring(adapting)

- Since, each project is unique; therefore, the PM will need to tailor(adapt) the way PQM processes are applied.

❖ Consideration for tailoring:

- ✓ **Policy compliance and auditing:** what quality policies and procedures exist in the organization? What quality tools, techniques, and templates are used in the organization?
- ✓ **Standard and regulatory compliance:** are there any specific quality standards in the industry that need to be applied? Are there any specific governmental, legal, or regulatory constraints that need to be taken into consideration?

Cont...

- ✓ **Continuous improvement:**
How will quality improvement be managed in the project? It is managed at the organizational level or at the level of each project?
- ✓ **Stakeholder engagement:** is there a collaborative environment for stakeholder and suppliers?

Considerations for agile/adaptive environments

- In order to navigate changes, agile method call for **frequent quality and review** steps built in throughout the project rather than the end of the project.
- In order to facilitate frequent, incremental delivery, agile method focus on **small batches of work, incorporating as many elements of project deliverables as possible.**