**Project Quality Management, PMBOK 6th Edition**

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“Project quality management ensures the project meets and exceeds stakeholder’s needs and expectations.”

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|  | **Project Quality Management** | **Process Groups** | | | | |
|  | **Major Processes** | Initiating | Planning | Executing | Monitoring &  Controlling | Closing |
| 🡪 | Plan Quality Management |  | 1 |  |  |  |
| 🡪 | Manage Quality |  |  | 2 |  |  |
| 🡪 | Control Quality |  |  |  | 3 |  |

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| Background. | Project Quality Program:  Quality Planning, Quality Assurance (QA), Quality Control (QC) |

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| Plan Quality Management. | “Identify the process to generate a Quality Management Plan.” |

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| Manage Quality. | “Implement the quality management plan.” |

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| Control Quality. | “Monitor project results and improve project performance.” |

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| **Project Quality Program** |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | ***Quality***  ***Planning*** | **🡪** | ***Quality***  ***Assurance (QA)*** | **🡪** | ***Quality***  ***Control (QC)*** | | “Define quality, standards, and the process to achieve them.” |  | “Implement the quality management plan.” |  | “Monitor project results and improve project performance.” | |  |  | **🡪** | **🡨** | **🡪** | | Create Plan |  | Follow Processes  Meet Standards |  | Identify Changes  Improve Quality | | Planning Group |  | Executing Group |  | Monitoring and Controlling Group | |

{ **Project Quality }**

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| **Definition.** | “**Project quality management** ensures the project meets and exceeds stakeholder’s needs and expectations.” |

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| ***Consider stakeholders from four different perspectives*** | |
| **Perspective** | **Examples** |
| Recipients of the product or service. | Sponsor, Customers |
| Participants in the process. | Team members |
| Citizens of the project culture. | Management |
| Observers of the project environment. | Regulatory agencies |

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|  |  | **Project Environment** |  |  |  |  |
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|  |  | **Project Culture** |  |  |  |  |
|  |  | **Process** | **🡪** | **🡪** | **Product** |  |
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Contrast “***project* quality management**” with “**quality management**”

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| **Area** | **Project Approach** | **Business Approach** |
| Time | Fixed term | Long term |
| Cost | Budget tied to deliverables | Budget tied to profitability |
| Scope | Focus on stakeholders | Focus on organizational objectives |

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| ***Criteria for Defining Project Quality*** | | |
| **Drivers** | **Primary** | **Secondary** |
| Product driven | Conformance to Specifications | Contributes to Organizational Reputation or Image |
| Process driven | Meeting Deliverables | Enhancing Organizational Assets |
| Quality driven | Satisfying Stakeholder Needs and Expectations | Improving Moral of Team Members |

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| ***Keys to Project Quality Management***  **\*Include Team Members**  **\*Measurement & Communication**  **\*Focus on timely deliverables that satisfy stakeholders** |

**Plan Quality Management**. “Identify the process to generate a Quality Management Plan.”

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|  | Project Deliverables, Standards, Stakeholder Requirements | | |
|  |  | 🡪 Design | |
|  |  |  | 🡪 Quality Management Plan |

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| Input (from PMBoK)   1. Enterprise environmental factors 2. Organizational process assets 3. Project scope statement 4. Project management plan | Quality Management Plan   1. Part of project management plan 2. Addresses QA & QC 3. Addresses continuous process improvement |

Contents of the Quality Management Plan

The quality management plan will decide what, when, how, who, and why to measure quality characteristics directed toward *project* quality.

* What to measure? (Quality checklist)
* When to measure? (Communications plan)
* How to measure? (Quality metrics)
* Who to measure? (Roles and responsibilities)
* Why measure? (Quality baseline and the risk management plan)
* Other – (Quality Audits & Reviews)

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| What to measure? The need to measure a quality characteristic can come from many sources. In deciding what to measure, ask these three questions:  If we do, will it help? 🡪 what is the value added  If we don’t, will it hurt? 🡪 what are the risks  Do we have to? 🡪 if it is required, just do it |

**Manage Quality.** “Implement the quality management plan.”

Plan 🡪 Audit 🡪 Quality Results

[Continual Business Process Improvement]

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|  | Plan | | 🡪 | Audit | | Ensure  🡪 | \*Process Improvement  \*Best Practices  \*Plan Updates | |  |
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**Control Quality**. “Monitor project results and improve project performance.”

Measurement 🡪 Analysis 🡪 Quality Improvement

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|  | Measurement  & Analysis | | 🡪 | Change | | Yes  🡪 | \*Verify Quality Improvement  \*Change Management  \*Configuration Management  \*Plan Updated | |  |
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**QA/QC: Measurement –Topics – Tools**

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| \*W. Edwards Deming. [14 Points – PDCA Cycle]  \*Walter Shewhart. [Process Control Charts (Shewhartian Charts)]  \*Kaoru Ishikawa. [7 Basic Tools – Cause-and-Effect Diagram (Fishbone Chart, Ishikawa Diagram)]  \*Joseph Juran. [Vital Many vs. Trivial Few (80/20 Rule or Pareto Analysis)]  \*7 Management Tools. (Planning)  \*Six-Sigma. (Conformance to Specifications)  \*Balanced Scorecard. (Management Strategy)  \*Total Quality Management. (Distributed Quality)  \*Leadership.  \*Workplace Factors.  \*Cost of Quality. (Prevention, Appraisal, Internal Failure, External Failure)  **Maturity Models**  \*Software Quality Function Deployment (SQFD)  \*Capability Maturity Model (CMM)  \*Organizational Project Management Maturity Model (OPM3) |

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| **PDCA Cycle**  .   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  | **Plan** | |  | **Do** | |  |  | |  |  |  |  |  | | **Improvement** |  |  |  |  |  |  |  | **Assurance** | |  |  | **Act** | |  | **Check** | |  | **(Precision)** | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  | |  |  |  | **Control**  **(Accuracy)** | | |  |  |  | |  |  |  |  |  |  |   . |

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| .  **The 7 Basic Tools**   * Check Sheet (Recording Measurements) * Pareto Analysis (Rank ordered histogram of attribute data) * Cause and Effect Diagrams (Identifying relationships) * Stratification (Examining levels of factors) * Histograms (Frequency content of variable data) * Scatter Diagrams (Relationship between two variables) * Control Charts (Monitoring one variable over time)   . |

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| .  **Six-Sigma (6-)**   * SIPOC (Supplier🡪Input🡪Process🡪Output🡪Customer) * CTQ (Critical-to-Quality) * VoP (Voice of Process) * VoC (Voice of Customer) * DMAIC (Define – Measure – Analyze – Improve – Control) * DMADV (Define – Measure – Analyze – Design – Verify)   . |