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**PMEducation**

**The following notes are taken from:**

**The Critical Link Between Requirements and Project Quality**

**By:** E.J. Smith

The body of knowledge regarding quality management is vast. This article is intended to give the project manager, and other key project stakeholders, preliminary insights to the importance of *Quality* Management in its relationship with *Project* Management. Readers are encouraged to reference, *A Guide to the Project Management Body of Knowledge* (4th ed., The Project Management Institute) for further information.

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*The ability of a project manager to irrefutably demonstrate that a project has met product requirements is predicated on how well the product’s requirements were defined in the first place.*  
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**Project Quality Management Overview**

Quality is defined as *fitness for use* and *adherence to requirements*. Both conditions must be met to achieve quality. Fitness for use is determined, ultimately, by the business customer. *The project* ***sponsor*** *is responsible for determining what will satisfy the business, and commissioning the proper project to create it.* However, even if a project completes on time, on budget and produces exactly what was requested (i.e., adheres to requirements), it will still be considered a failure if the business customer does not perceive value in what the project *produced (i.e., fitness for use).*  
 *Adherence to requirements is the responsibility of the* ***project manager****.* The act of proving whether requirements have, or have not, been met is called validation; and it is typically accomplished via observation and measurement. When requirements are correctly defined, validation can be achieved regardless of who performs the validation activities, or how many times they are repeated. Conversely, when requirements are not well defined, inconsistent test results, arguments, misaligned expectations, dissatisfied stakeholders and perceptions of failure are more likely to result.

**Quality Standards, Quality Assurance and Quality Control**

A customer requirement becomes a Quality Standard when it has been defined, documented, and placed under formal change control. After Quality Standards are *baselined* in this manner, the next step is to define the Quality Control (QC) and Quality Assurance (QA) activities used to meet the Quality Standards. We will use the following definition for QC and QA:  
  
QC measures performance against quality standards and may lead to corrective actions based on the findings*.*  
QA ensures the efficacy of QC by examining if we are measuring the right things, properly and interpreting the results accurately.

Use the following checklist of questions as a basis for designing Quality Control activities:

* Does each Quality Standard have a QC activity assigned to it?
* For each QC activity:
  + What will be measured?
  + How will it be measured?
  + Who will perform the measurement activity (project team, customer, third party …)?
  + How many times will the activity be performed (once, in batches, periodically)
  + Where will the activity be performed (location, environment ...)?
  + When will the activity be performed (upon delivery, event triggered, project end …)?
  + Under what environmental conditions?

Use the following checklist as a basis for designing Quality Assurance activities:

* Who will observe / verify the activity results?
* How will the test environment be configured, and who will create and validate the environment?
* If sampling, how do we know the samples accurately represent the population?
* What constitutes “accurate”, and how will we know if the data meet this criterion?
* Who will sign the technical and/or managerial acceptance documents?
* How do we determine if a QC (or QA) initiated actions are producing desired results?

**Quality of Project Management**

The assertion here is: “Projects managed in a quality manner will produce quality results.”Among the subsidiary plans that comprise a comprehensive Project Management Plan, the Quality Management Plan addresses both *product* and *project* requirements.  
  
All projects have requirements and deliverables that are not features of the product itself. Rather, such requirements and their corresponding deliverables support the *management* of the project. One approach to identifying project management requirements is to review the ten project management knowledge areas and consider the inputs and outputs involved.

**Example 1**

One example concerns the requirements of Risk Management. A good practice is to identify and document project risks in a Risk Register. This register typically contains information on the nature of identified risks, risk priorities, risk owners and any risk response plans in place or underway. Because risks come and go throughout a project’s life cycle, it is also good practice to periodically convene the project’s key stakeholders to review and update the risk register. Two *project management quality requirements* are clearly identifiable here are:

* A risk register, and
* Periodic risk review meetings to maintain the register.

Quality control for these requirements is addressed by placing activities for risk register creation and maintenance, and periodic risk review meetings into the project schedule. These are the QC activities necessary to ensure project management adheres to the requirements of the prescribed risk management processes. But how do we know these activities are effective? Through Quality Assurance. QA activities would focus on ensuring the meetings actually occur, the risk register is actually maintained and the QC activities are not only occurring as planned, but are actually doing an adequate job of managing risk. The first two of these QA activities involve auditing; the third concerns the efficacy of the other two, i.e. are those activities producing the desired results? Suppose during the execution phase of the project audits indicate risk meetings are occurring as planned and the risk register is being well maintained. Suppose further it’s become apparent the project is encountering too many risks that should have been identified in the planning phase, but alas, were not. The QA response may be to increase the frequency of the risk management meetings and/or to remediate with additional risk planning to identify what should have been identified prior to execution.

Similar QC and QA activities can be formulated based on each of the knowledge area’s processes as well as various essential PM functions.

**Example 2**

A second example concerns the application of stage gates between project life-cycle phases. As a project transitions from, say, the planning phase to the execution phase the project schedule should contain review activities to ensure all previously due project deliverables have been properly created and approved. The following checklist can be used as a basis for such a quality activity:

* Has the project charter been reviewed for accuracy and signed by all signatories?
* Have all the product requirements been identified?
* Do all the product requirements meet the SMART criteria?
* Does each product requirement have at least one quality standard to measure?
* Are there adequate QA activities to prove the QC activities are effective?
* Have all tasks for creating the product and managing the project been identified?
* Have all tasks been scheduled using an appropriate technique and expertise?
* Have all the necessary resources been secured and committed to the project by their managers?
* Is the budget secured?

Although this is not a comprehensive list, it illustrates how QA/QC activities can be applied as checkpoints throughout your projects’ life cycle.