

# PROJECT QUALITY MANAGEMENT IN A COMPETENCY-BASED APPROACH

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## Abstract

*The Project Management Body of Knowledge (PMBOK) standard and guide has offered a comprehensive approach to project management for decades. The seventh edition, published in 2021, embodies significant changes by switching from process orientation to competencies. Project quality management is a knowledge area where process monitoring and documentation must have special attention. Competencies lead to a broader interpretation of quality-related activities, with reduced weight on quality assurance but an increased focus on quality inspection and management. The paper aims to evaluate the main changes in quality-related regulation. The evolution of the approach is radical, but the benefits are available only for organizations with well-established methodological knowledge. The support of process-oriented project management may not be abandoned.*

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## 1 Introduction

Competencies have become a keyword and buzzword for developing education programs. It can be defined as the knowledge, skills, and qualities of effective managers or leaders [9]. Competencies are dimensions of behavior that are related to superior job performance [23]. Beyond vocational education and training, bachelor's and master's programs are planned for developing dedicated competencies. All this is not an end itself but an increased response to the market expectations. Both professional and scientific literature deal more and more with competencies. Management standards involve competencies for decades as personal characteristics in line with the task requirements. The next level of thinking is when a system-oriented approach is presented in the expectations, extending competencies to the group, functional or organizational levels.

A project aims to improve organizational performance, but project success and benefits are available much later than the project closure. Due to this characteristic, the resolution of practical contradictions motivates the research of project and project management success [2] [6] [15], confirming the need for a competency-based approach [21]. The competency-based approach is not a brand-new idea in project management (see [11]). Beyond the studies dealing with the project managers' impact on success, targeted standards have been developed. Project Manager Competency Development Framework [20] by the Project Management Institute has been available since 2002. Among others, the Individual Competence Baseline (ICB) [12] by the International Project Management Association or the APM Competence Framework [1] of the Association for Project Management can be highlighted as comprehensive guides for a competency-based project management practice.

Ultimately, fulfilling this need leads to rethinking the standardization of project management, but simultaneous dealing with processes and competencies can lead to exciting situations and redundant control. This paper investigates the issue in the field of project quality management

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changes in the recent edition of the PMBOK standard and guidelines [19]. Project quality management requires an integrative approach in the sense it is the project-oriented management of a project [3].

## 2 Methods

The project definitions state the individual and unique characteristics [8] [17] [22] in deliverables. Consequently, project management tasks should be individually planned and performed. On the other hand, despite the uniqueness, there are common challenges that allow some standardization. Project Management Institute (PMI) is one of the organizations which publishes a wide range of standards related to project management. This study focuses on the seventh edition of the Project Management Body of Knowledge (PMBOK) standard and guide, published by the PMI in 2021 [19]. The new requirements will be evaluated in comparison with the previous editions. A new approach was applied in organizing the requirements, and competencies have an essential emphasis in the standard. Organizations may need serious efforts to adapt to the new structure. Project quality management is selected for the analysis.

The goal of the study is to present how the competency-based approach permeates and modifies the traditional way limited to the field of project quality management. The conclusions are based on the document analysis of the PMBOK standards focusing on the proposal made on quality-related activities, including inspection, control, assurance, and management [5].

## 3 Results

### 3.1 Evolution of PMBOK

The first impression of reading the recent edition of the PMBOK® is that its size has increased significantly. While the 2000 Edition (2000) used 216 pages, the fifth edition (2008) in 2013 required 589 pages. However, the sixth edition in 2017 incorporates the agile approach; it uses 976 pages [4]. The seventh edition is slim again; the new guides are presented in 370 pages.



Figure 1. PMBOK editions ([www.4pmti.com/PMBOK-6th-ed-changes.aspx](http://www.4pmti.com/PMBOK-6th-ed-changes.aspx))

Beyond the length of the text, elementary changes are applied in the structure and foundations. The approach has been changed from a prescriptive to a descriptive direction, emphasizing actions, behaviors, and customer orientation defined by principles. The main questions have become what and why rather than how. In other words, the focus has been moved from managing processes to deliverables and project stakeholders. A new element is the specific tailoring guide, which allows a broader application opportunity of the standard than before. It is stated that the edition is applicable to any project. The new style and approach must be tasted and accustomed to [14].

The knowledge base was organized into areas (Figure 2) as a set of processes associated with a particular topic in project management [17]. The scope of the processes was refined through time and editions, but the matrix defined by the knowledge areas and project management process groups offered a map for project management. Such binding of the processes is missing from the seventh edition. There are no detailed process descriptions. Instead, models, methods, and artifacts are used. Eight performance domains are established: stakeholders, team, development approach and life cycle, planning, project, work, delivery, measurement, and uncertainty. The principles of project management are titled as follows [19]:

- be a diligent, respectful, and caring steward,
- create a collaborative project team environment,
- effectively engage with stakeholders,
- focus on value,
- recognize, evaluate, and respond to system interactions,
- demonstrate leadership behaviors,
- tailor based on context,
- build quality into processes and deliverables,
- navigate complexity,
- optimize risk responses,
- embrace adaptability and resiliency,
- enable change to achieve the envisioned future state.

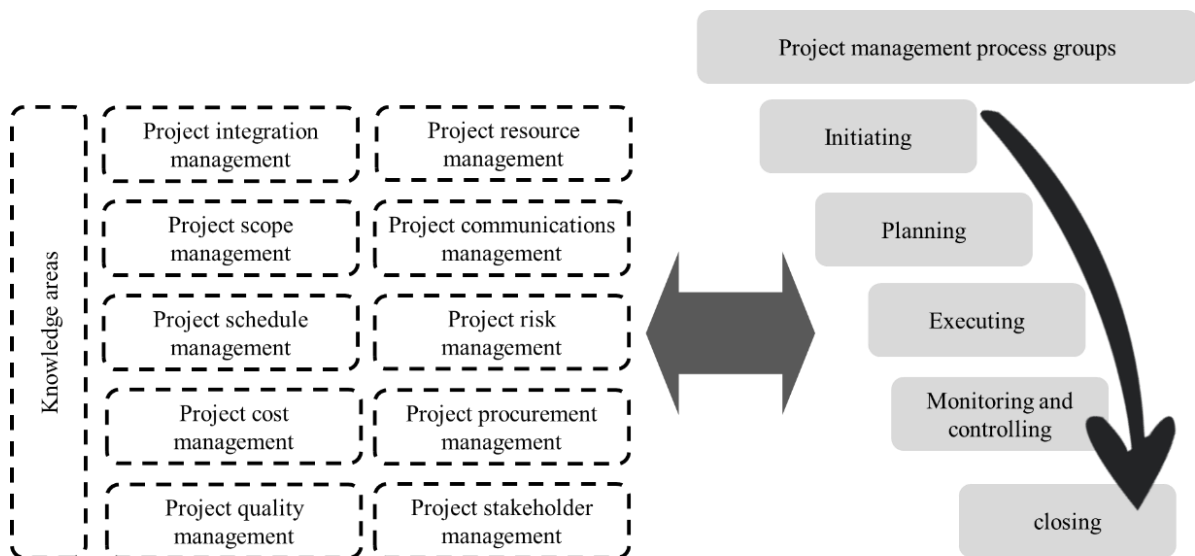


Figure 2. PMBOK knowledge areas and process groups (based on [19])

### 3.2 Approach to quality management in the former editions of PMBOK

Knowledge and processes on project quality management were summarized in a knowledge area of the PMBOK, crossing the planning (Plan Quality Management), the executing (Manage Quality), and the monitoring and controlling process groups (Control Quality). The goal is to incorporate the organization's quality policy regarding planning, managing, and controlling the project and product quality to meet the stakeholders' requirements [17]. A common characteristic in the fifth and sixth editions of the PMBOK is that the related chapters show detailed process descriptions of the activities. Refinements of the terminology can be found in the text.

Managing quality means translating the quality management plan into executable quality activities. This includes the application of organizational quality policy in the project. The fifth edition used the expression "perform quality assurance" for the process of auditing the quality requirements and the results from quality control measurements to ensure that appropriate quality standards and operational definitions are used [18:242]. According to quality control, the fifth edition of PMBOK emphasized corrections and preventions, identifying and eliminating failures, while the sixth edition focuses on performance evaluation and ensuring that the outputs meet the requirements.

### 3.3 Quality Management in the seventh edition

The seventh edition of PMBOK includes a 3-page chapter entitled "Build quality into processes and deliverables". Quality focuses on meeting acceptance criteria for deliverables, and through this, satisfying stakeholders' expectations and fulfilling project and product requirements are achievable. As a basic concept, it incorporated the quality definition of the ISO 9001:2015 standard [13].

Continuity and integration are ensured by emphasizing that project quality management covers managing project processes appropriately and as effectively as possible. A reference to product [7] and service quality measures [16] [24] is to find in the text of the standard. Some product and service quality dimensions are highlighted, with guidance formulated as questions [19:48]

- Performance: Does the deliverable function as the project team and other stakeholders intended?
- Conformity: Is the deliverable fit for use, and does it meet the specifications?
- Reliability: Does the deliverable produce consistent metrics each time it is performed or produced?
- Resilience: Is the deliverable able to cope with unforeseen failures and quickly recover?
- Satisfaction: Does the deliverable elicit positive feedback from end users? Does this include usability and user experience?
- Uniformity: Does the deliverable show parity with other deliverables produced in the same manner?
- Efficiency: Does the deliverable produce the greatest output with the least amount of inputs and effort?
- Sustainability: Does the deliverable produce a positive impact on economic, social, and environmental parameters?

The project team's responsibility is to measure quality by using metrics and acceptance criteria traced back to stakeholders' expectations and requirements. The main focus is obviously on the deliverables. Beyond ensuring product and service quality, corrective actions for exploring the reasons for errors and defects are included, as well as quality audits. The results are summarized as follows [19:49]:

- moving the deliverables to the point of delivery quickly, and
- preventing defects in the deliverables or identifying them early to avoid or reduce the need for rework and scrap.

The organizational level expected outcomes cover [19]:

- timely or expedited delivery,
- enhanced cost control,
- good supply chain integration,
- improved productivity,
- increased project team morale and satisfaction,
- improved decision-making, and
- continually improved processes.

## 4 Discussion

The changes in the PMBOK in structure, message, and approach are remarkable. A competency-based approach to project activities has undoubtedly come to the fore. Enhancing the scope of the standards and the guide from most projects to any projects is not available without this change, but the intention also requires victims. A guide fits for all, ultimately fits for none. The professional and detailed regulation of processes may benefit some companies with a high-developed system of processes and present a serious challenge to others.

According to quality management and quality-related activities, the progress seems questionable at first sight. The turn towards competencies upstaged the detailed description of the processes, making the implementation difficult for organizations with limited experience in quality management systems. Former editions of the standard clearly defined the tasks, inputs, outputs, as well as documentation or methods. As a result, the tailoring of quality management was implemented without explicitly mentioning it. The limitation of the detailed processes was spectacular in large organizations with individually developed or industry-specific quality management systems. The requirements of the quality management system could lead to redundant processes and reports.

The seventh edition elevated quality management to principles indeed that highlight the importance of the topic. Moreover, tailoring project and quality management is strengthened by incorporating ISO 9001 definitions. However, the concise wording and the general guide may result

in a feeling of lack. Further support is suggested. Organizations will probably return to the former editions of PMBOK to implement the necessary processes and documentation in the mirror of the new principles.

A mixed image is found by checking the new approach in the mirror of quality-related activities (Figure 3). While former PMBOK editions used quality assurance and the tools forced preventive actions in conjunction with risk management [21], these activities received less attention in the new one.

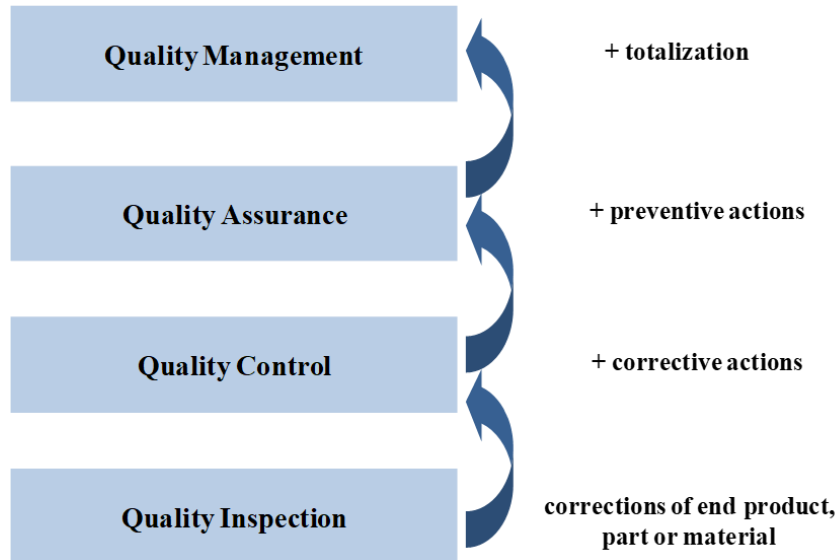


Figure 3. Quality-related activities [5]

It can be summarized that the change to a competency-based approach in the field of quality management makes steps both forward and backward at the same time:

- the focus on deliverables requires quality inspection tools and partly quality control,
- the missing guide on detailed documentation does not necessarily support monitoring and controlling the events and trends (quality control),
- stakeholder orientation is a clear step forward to the totalization of quality management.

## 5 Conclusion

A competency-based approach to project management is gaining ground both in education and management practice. It can be the key to success, but it is to note that competency, the ability to do something successfully or efficiently, cannot be interpreted without accurate knowledge of the “something”. Task properties, procedures, information, and other requirements; in other words, the process remains a determining success factor. Although the process-based approach gets less and less attention, it should not be retired yet.

The seventh edition of PMBOK offers a smart approach to project management, incorporating the trends that appeared in other standards and guides. A decrease in page count is welcome, but less space usually can hold less knowledge. Organizations and project experts must develop additional toolsets if a radical improvement in performance is expected. Since quality management has an organizational embedding and industry-specific requirements far beyond the project management applications, leaving the process-based approach is not possible in the short term. At the same time, I believe that project experts must realize that a flexible methodological base can serve both approaches effectively.

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