OVERVIEW ABOUT PROJECT QUALITY MANAGEMENT

Catalin Drob
"Vasile Alecsandri" University of Bacau
catad@ub

Abstract
The purpose of this study is to emphasize the main aspects regarding project quality management. This study tries to present in the comparative manner, different approaches of the main guidelines, international standards and methodologies regarding project quality management (the PMBOK ® Guide elaborated by the Project Management Institute, the PRINCE method elaborated by the British Office of Government Commerce etc.). The PMBOK® Guide describes three elements (processes) of quality management: quality planning (plan quality management), quality assurance (perform quality assurance) and quality control (control quality). The PMBOK approach regarding project quality management is that quality management must lead to achieving and validating project requirements. According the PRINCE method the quality is one of the six variables involved in any project. The PRINCE approach regarding project quality management considers that strategy in this field must lead to achieving just the level of quality needed to achieve in the project and not to ensuring the best quality.

Keywords
project management; quality; processes; standards

JEL Classification
M10

1. Introduction

The concept regarding project quality management is relative new. In recent years there have been published various standards and methodologies relating to project management, in general, and relating to project quality management, in particular, such as: The PMBOK® Guide, the PRINCE methodology, the P2M guidebook, the ISO standards and so on. This study tries to present the different approaches of these international standards and methodologies regarding project quality management.

2. Defining quality

The first thing that must be made when we discus about project quality management is to define the quality. Quality is an abstract concept, not very easy to define. In fact, the consumer is the one who defines quality because he is the one who receives it. When all needs are met and when all expectations are met or exceeded, we consider that we received quality.

The specialized literature proposes several definitions of the concept of quality, such as the following:

- quality represents the conformance to requirements, as stated by Crosby (1979);
- quality means fitness for use, as stated by Juran and Godfrey (1999);
- good quality means a predictable degree of uniformity and dependability with a quality standard suited to the customer as stated by Deming (2000);

- quality represents the degree to which a set of inherent characteristics fulfill requirements as stated by ISO 9000 (2005).

In the last 30 years, in the field of quality/quality management has been occurred a revolution in the sense that quality no longer refers only to product or service but also to other aspects such as, for example: quality leadership, quality of project management and so on. This new approach has emerged and developed in response to the increasingly high standards imposed by the beneficiaries.

3. Project quality management approaches

3.1 The PMBOK guide approach regarding project quality management

The Project Management Institute has proposed a set of standards and practical guidance for project field, in a document known as the PMBOK (**P**roject **M**anagement **B**ody **O**f **K**nowledge) Guide. The first official edition of this guide was published in 1996 and the last (the fifth) edition of this guide was published in 2012. This guide analyzes specific aspects regarding project quality management in the chapter no. 8.

The PMBOK® Guide defines the quality in the similar way as is presented in the ISO 9000 standard. In fact, the entire approach regarding project quality management is compatible with ISO quality standards. This approach emphasizes the importance of the following aspects, as stated by PMI in the PMBOK® Guide (2012):

- customer satisfaction;
- prevention over inspection;
- continuous improvement;
- management responsibility;
- cost of quality.

The PMBOK® Guide treated the project management based on project management processes. The project quality management includes, as stated by PMI in the PMBOK® Guide (2012), three processes:

- plan quality management, that identifies quality requirements and documents how the project will demonstrate compliance with quality requirements;
- perform quality assurance, that audits the quality requirements and the results from quality control measurements;
- control quality, that monitors and records the results of quality activities to assess performance and recommend necessary changes.

For all these processes, the PMBOK® Guide presents the inputs used, the tools and techniques applied to these inputs and the outputs generated. The tools and techniques which can be used in the project quality management processes are diverse (such as: cause and effect diagrams, control charts, cost of quality, inspection etc.) and depend on type of deliverables that will be produced by every project.

The PMBOK® Guide mentions that every project should have a quality management plan. It is very important to have such a plan but equally important is to respect and accomplish it.

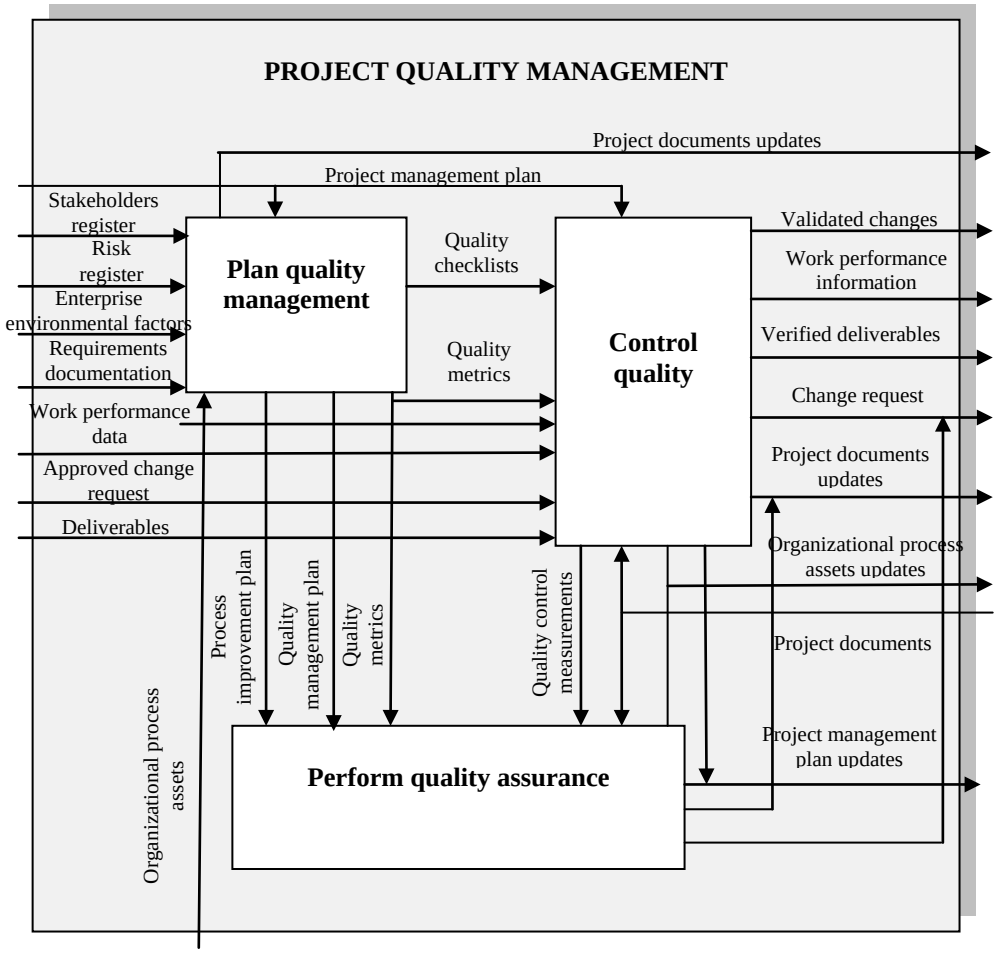

Figure 1 Plan Quality Management Data Flow Diagram
Source: Adapted by PMI (2012), PMBOK® Guide, Fifth Edition, Newtown Square, PA, USA, p. 229.

3.2 The PRINCE2 approach regarding project quality management

The PRINCE method (methodologies) was adopted in the UK, in 1989, when the standard for UK government information systems projects named PROMPTII has transformed in PRINCE after it suffered several changes. Later, after 1996 this method was replaced with PRINCE2. This new method was subsequently updated in 2002, 2005 and in 2009.

The 2009 edition of PRINCE2 method is more pragmatic and more concise than the other editions. This edition of PRINCE2 method contains two distinct parts:

- Part I: Managing successful projects, which is the big one;
- Part II: Directing successful projects.

Generally, PRINCE2 considers that the project management can be described through the following models: the process model and themes (subject area) model.

For PRINCE2 the quality is a very important variable that must be permanently monitored and controlled (stage by stage), as stated by Graham (2010):

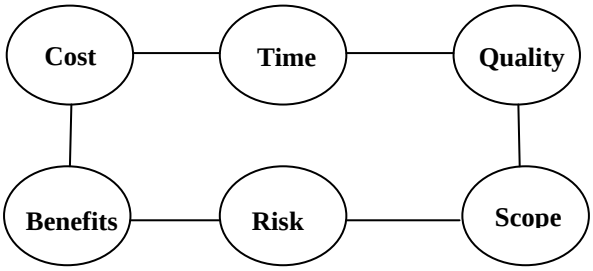

Figure 2 The six areas of control in PRINCE2
Source: Adapted by Graham, N. (2010), PRINCE2 for dummies, West Sussex, John Wiley and Sons Ltd. Publication, p. 24.

For PRINCE2 the quality is treated distinctively like a very central theme. The other main themes described in PRINCE2 are: business case, organization, plans, risk, change and progress. The quality theme tries to find answers to following questions:

- What quality level must be reached?
- What must to do to reach the required level of quality?

After it is defined the level of quality that must be reached is important to draw up a document named "Quality Management Strategy" that defines the way in which will be reached the required level of quality. To be sure that will be reached the required level of quality the Quality Management Strategy must be applied and accomplished.

3.3 The P2M's approach regarding project quality management

A few years ago (starting with the late 1990s), the Engineering Advancement Association of Japan has proposed a guide concerning project management, known under the name of P2M (a guidebook for **p**roject and **p**rogram **m**anagement for enterprise innovation). In present, this guide is managed by the Project Management Association of Japan (PMAJ). In Japan, in the last years, was developed a new approach in project management: Kaikaku Project Management (KPM) which is considered an advanced version of P2M.

P2M guide considered that a project is carried out within a framework of a program and not independently. P2M guide is structured in four parts: Project Management Entry, Project Management, Program Management and Domain/Segment Management. These parts form the so-called Project Management Tower.

In this guide, the aspects regarding quality management are presented in the fourth part called Domain Management. The Domain/Segment Management contains the followings: the project strategy management, the project finance management, the project system management, the project organization management, the project objectives management and others (11 items in total).

The project quality management is included in the project objectives management domain as a work process that forms the core of project management together with the life cycle management, the scope management, the cost management, the time management, the earned value management, the report/change management and the delivery management.

The project quality management should be based on the customer's quality requirements. The quality management system should provide a framework of continuous improvement in order to increase or improving the satisfaction of the customers, as stated by PMAJ (2005).

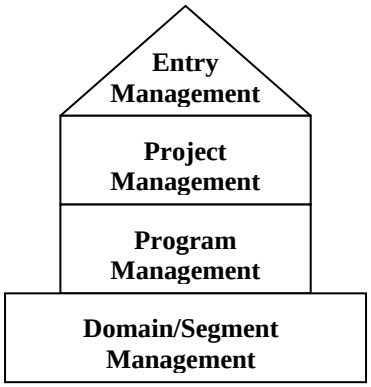

Figure 3 The Project Management Tower
Source: Adapted by PMAJ (2005), A Guidebook of Project & Program Management for Enterprise Innovation, p. 11.

4. Comparative analyses between different approaches of the main guidelines, international standards and methodologies regarding project quality management

The first thing which is important to be mention is that we are talking about different kind of approach of the main guidelines, international standards and methodologies regarding project management. PMBOK and PRINCE2 are regarded as process orientated standards while P2M is regarded as mission orientated standard. While PMBOK and PRINCE2 are considered project management approaches of the second generation, P2M is considered project management approach of the last (third) generation. This new project management approach is more adaptable to flexible environmental changes and is more able to solve actual complex problems. P2M tries to create value not only for consumers but for all stakeholders of the project.

The second thing: while the PMBOK, P2M and ISO standards are considered descriptive project management body of knowledge/guides the PRINCE2 is considered a prescriptive project management methodology.

The last but not the least thing: in every international standards regarding project management, the project quality management is considered one of the most important concepts/aspects analyzed, that should be applied when carrying out a project.

5. Conclusions

In the last years, (Total) Quality Management was integrated in the Project Management, resulting a new concept: Project Quality Management. This new concept is presented in a manner more or less detailed in the main international standards/methodologies regarding project management. In these standards the Project Quality Management is considered one of the most important bodies of knowledge/domains management of project.

Even if the different approaches included in the main international standards regarding project management (project quality management) are not always very similar, the ultimate goal of applying this new concept is common: to meet or exceed the expectations of the consumers in the best way.

References

Crosby, P.B. (1979), *Quality is free*, New York, McGraw-Hill.

Deming, W.E. (2000), *The new economics for industry, government and education* (2th edition), Cambridge, The MIT Press.

Graham, N. (2010), *PRINCE2 for dummies*, West Sussex, John Wiley and Sons Ltd. Publication.

International Organization for Standardization (2003), ISO 10006:2003, *Quality management systems – Guidelines for quality management in projects*, Geneva.

International Organization for Standardization (2005), ISO 9000:2005, *Quality management systems - Fundamentals and vocabulary*, Geneva.

Juran, J.M., Godfrey, A.B. (1999), *Juran's Quality Handbook* (5th edition), New York, McGraw-Hill.

Office of Government Commerce (2009), *Managing and Directing Successful Projects with PRINCE2* (2009 edition), The Stationery Office, UK.

Project Management Association of Japan (2005), *A Guidebook of Project & Program Management for Enterprise Innovation*, Vol I, available on http://www.pmaj.or.jp/ENG/P2M_Download/P2MGuidebook Volume1_060112.pdf.

Project Management Association of Japan (2005), *A Guidebook of Project & Program Management for Enterprise Innovation*, Vol II, available on http://www.because-i.org/P2MGuidebookVolume2_041014.pdf.

Project Management Institute (2013), *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, (5th edition), Newtown Square, USA.

Zafarani, E (2011), *Project Quality Management Approaches: A Comparative Evaluation of International Standards*, International Conference on Construction and Project Management IPEDR, Singapore, Vol.15, p.37-43.