# OVERVIEW REGARDING THE MAIN GUIDELINES, STANDARDS AND METHODOLOGIES USED IN PROJECT MANAGEMENT

**CĂTĂLIN DROB**[1*], **VALENTIN ZICHIL**[1]

[1] *"Vasile Alecsandri" University of Bacau, Calea Marasesti 156, Bacau, 600115, Romania*

**Abstract:** This article tries to present the basic elements of the main guidelines, international standards and methodologies (methods) used in project management. In this category we include: the PMBOK®Guide (elaborated by the Project Management Institute), the PRINCE method (elaborated by the British Office of Government Commerce), the ISO 21500:2012 standard (elaborated by the International Organization for Standardization) etc. At the basis of these guidelines, standards and methodologies stay a great practice experience. Depending on the particularity and type of project, of management philosophy and culture of the organization that runs the project, we can choose to apply a certain guide, standard or methodologies (methods). The stated goal of these guidelines, standards and methodologies (methods) is to provide an optimum framework, the best practice for manage project to success. Applying these guidelines, standards and methodologies (methods) may be prerequisite project success, being a necessary but not always sufficient.

**Keywords:** guidelines, standards, methodologies, project management

## 1. INTRODUCTION

The most important objective of this paper is to present the basic elements of the main guidelines, international standards and methodologies (methods) used in project management such as: the PMBOK®Guide, the PRINCE method, the ISO 21500:2012 standard etc.

In the last years was founded several associations which have the aims to promote and develop the project management. The best known association that operates in the project management field is the Project Management Institute (PMI) which was founded in 1969. The PMI has proposed a set of standards and practical guidance for this field, in a document known as the PMBOK (**P**roject **M**anagement **B**ody **of K**nowledge) Guide [1].

Another famous organization in the field of the project management is the International Project Management Association (IPMA) which is a federation of over 55 international and national associations such as the Association for Project Management (APM) from UK, the Spanish Association for Project Engineering (AEIPRO) or Australian Institute of Project Management (AIPM). This association was founded in 1965 under the name of International Management Systems Association. Later, in 1979 the association has changed the initially name to IPMA.

[*] Corresponding author, email: catad@ub.ro

IPMA has elaborated a standard for the work of project management professionals through the IPMA Competence Baseline (ICB). This is a competence standard used in the certification of project managers, which was adopted and appropriated by all IPMA member associations [2].

In addition to these associations there are other professional organizations that also promote and develop the project management such as the Engineering Advancement Association of Japan (ENAA). This association has published their distinctly guide known under the name of P2M (a guidebook for project and program management for enterprise innovation). In present, the P2M is managed by the Project Management Association of Japan [3].

## 2. OVERVIEW REGARDING THE MAIN GUIDELINES, STANDARDS AND METHODOLOGIES USED IN PROJECT MANAGEMENT

In the last years, several guides, standards and methods concerning the project management were proposed such as:
- The PMBOK®Guide;
- The PRINCE methods;
- ISO 10006:2003 standard;
- ISO 21500:2012 standard;
- The P2M guidebook etc.

### 2.1. The PMBOK® Guide/standard

This guide provides guidelines, rules and characteristics for project management. In 1987 the PMI published a document named "The Project Management Body of Knowledge" (PMBOK). After suffering significant improvements, this document was superseded with another document named "A guide to the Project Management Body of Knowledge" (PMBOK®Guide). The first official edition of this guide was published in 1996. The second was published in 2000, the third in 2004, the fourth in 2008 and the fifth edition of this guide was published in 2012 [4-8]. The PMBOK® Guide is considered the American national standard for project management.

PMBOK®Guide presents basic practices and key tools and techniques that can be applied for the good management of a project.

The PMBOK®Guide treated the project management based on project management processes which form five process groups. Also, this guide considered that project management can be covered by several knowledge areas. Comparing the five editions of the guide, we can say that the approach to project management has suffered in last years, several changes both in terms of number of processes and their name and definition (see Table 1) [4-8].

Table 1. Number of project processes included in the five editions of the PMBOK®Guide.

| PMBOK® Guide edition / Knowledge area | 1996 | 2000 | 2004 | 2008 | 2012 |
|---|---|---|---|---|---|
| | Number of project processes | | | | |
| Integration | 3 | 3 | 7 | 6 | 6 |
| Scope | 5 | 5 | 5 | 5 | 6 |
| Time | 5 | 5 | 6 | 6 | 7 |
| Cost | 4 | 4 | 3 | 3 | 4 |
| Quality | 3 | 3 | 3 | 3 | 3 |
| Human Resource | 3 | 3 | 4 | 4 | 4 |
| Communication | 4 | 4 | 4 | 5 | 3 |
| Risk | 4 | 6 | 6 | 6 | 6 |
| Procurement | 6 | 6 | 4 | 4 | 4 |
| Stakeholder | - | - | - | - | 4 |
| **TOTAL** | 37 | 39 | 44 | 42 | 47 |

### 2.2. The PRINCE standard/method

This standard is, in fact, a structured method, based on product, for effective project management. The PRINCE method was adopted in the UK, in 1989, when the standard for UK government information systems projects named PROMPTII has suffered some changes and has transformed in PRINCE. Starting with 1996 this method was replaced with PRINCE2. The PRINCE was updated in 2002, 2005 and in 2009. In present, the PRINCE2 methodology is the UK de facto standard for project management [9].

Compared to the 2002 edition, in the edition of 2005 of this standard/method have been made several changes but only to clarify some areas. In contrast, the 2009 edition wants to be a more pragmatic approach and more concise. The number of pages of the 2009 edition decreased from 456 (how many were in the 2005 PRINCE2 edition) to 325 and the number of processes decreased from 8 to 7 (see Table 2) [9].

Table 2. The PRINCE2 project processes.

| The PRINCE2 2005 project processes | The PRINCE2 2009 project processes |
|---|---|
| Starting up a Project | Starting up a Project |
| Initiating a Project | Initiating a Project |
| Directing a Project | Directing a Project |
| Controlling a Stage | Controlling a Stage |
| Managing Product Delivery | Managing Product Delivery |
| Managing Stage Boundaries | Managing Stage Boundaries |
| Closing a Project | Closing a Project |
| Planning | |

Also, in the 2009 edition of the standard/method it has been made changes regarding the terminology. Thus, the previous "Components" of 2005 version have replaced (renamed) with "Themes". In terms of content, the PRINCE standard/method considerate that the project management can be described by two models: the process model and themes (subject area) model.

At present, the standard contains two distinct parts:
- Managing Successful Projects;
- Directing Successful Projects.

In principle, the Prince2 standard says what must be done in project, when and how it must be done and by whom.

### 2.3. ISO 10006:2003 and ISO 21500:2012

The International Organization for Standardization (ISO) has proposed some guidelines/standards for project management such as: "ISO 10006:2003, Quality management systems – Guidelines for quality management in projects" or "ISO 21500:2012, Guidance on project management" [10, 11]. The first edition of the ISO 10006 was published in 1997 and the second in 2003. ISO 10006 provides the guidance on quality management in projects.

ISO 21500:2012 is the latest standard elaborated by the International Organization for Standardization in the field of the project management. ISO 21500:2012 was developed starting on the core of the standard elaborated by PMI. Between ISO 21500:2012 standard and the PMBOK® Guide, there are many similarities but also some differences.

Thus, ISO 21500 divides project processes in the same mode like PMBOK (into five process groups). From this point of view, the differences between these two standards are insignificant (there are a few differences between the names of the process groups).

In ISO 21500, the knowledge area concept from the PMBOK has been replaced with the concept of subject. The number and the name of knowledge areas in the PMBOK®Guide (fifth edition) are identically with the number and the name of subjects from ISO 21500. If in the fifth edition of PMBOK®Guide there are 47 de processes, in ISO 21500 there are only 39 processes (most of which have equivalents in the PMBOK standard) [8, 11].

### 2.4. P2M

P2M (A Guide for Project and Program Management for Enterprise Innovation) was developed starting with the late 1990s and was released in 2001. P2M is considered the Japan's answer to the PMBOK®Guide. P2M tries to expand the project management bodies of knowledge standards to the total management of projects. P2M was developed starting on necessity of creating a framework of innovation in the Japanese enterprises leading to the success of the projects undertaken by these. The goal of P2M is to give for manager the practical capability in order to conduct the project to success [12].

The P2M guide considers that there are different kinds of projects consisting in concept development (scheme model), implementation (system model) and operation (service model). This approach is known as a name "3S". The original approach of P2M is based on the concept that projects must create value to both the company and to society and is focused on clients' goals.

In Japan, in the last years, was developed a new approach in project management: Kaikaku (reforms – in English) Project Management (KPM) which is considered an advanced version of P2M. The philosophy of this new approach starting on three keywords: innovation, development and improvement (kakusin, kaihatsu, kaizen – in Japanese). This new approach is known as a name "3K". Starting on whole lifecycle of the project, the goal of KPM is to create value for the future [13].

## 3. COMPARATIVE ANALYSIS OF THE MAIN GUIDELINES, STANDARDS AND METHODOLOGIES USED IN PROJECT MANAGEMENT

First of all, we must make a difference between these guides, standards and methods/ methodologies in terms of approach and content. The standard consists of a number of processes and project areas which are considered good practices. The methodology is a suite of methods and processes that can be used in every project in order to achieve the objectives. Methodologies can describe how standards must be effectively applied in particular conditions. A methodology can be adopted as a standard but a standard cannot become a methodology. Thus, the PMBOK®Guide/standard can be considerate a base for a project management methodology but the PMBOK®Guide/standard can't become a methodology. PRINCE2 is a project methodology in the field of project management and, also, is the UK de facto standard for project management. Unfortunately, in practice, most project managers don't make the difference between guides, standards or methodologies used in project management [14, 15].

Comparing the main guidelines, standards and methods/ methodologies regarding project management we can identify many common elements but also some differences in terms of their approach to process and areas / themes /subjects of project management (see Table 3 and Table 4).

Table 3. The process groups/ processes of project management.

| | **PMBOK 2012** | **ISO 21500** | **PRINCE2 2009** |
|---|---|---|---|
| **Process groups / processes** | Initiating | Initiating | Starting up a Project, Initiating a Project |
| | Planning | Planning | Managing Product Delivery, Managing Stage Boundaries |
| | Executing | Implementing | Directing a Project, Managing Product Delivery, Managing Stage Boundaries |
| | Monitoring and Controlling | Controlling | Controlling a Stage |
| | Closing | Closing | Closing a Project |

Table 4. The knowledge areas/ themes/ domain/ subjects of project management.

| | PMBOK 2012 | ISO 21500 | PRINCE2 2009 | P2M |
|---|---|---|---|---|
| Knowledge areas / themes/ domain/ subjects/ | | | | Strategy |
| | | | | Systems |
| | | | | Objectives |
| | | | | Information technology |
| | | | Progress | |
| | Integration | Integration | Change | |
| | Scope | Scope | Business Case | |
| | Time | Time | Plans, Business Case | |
| | Cost | Cost | Business Case | Finance |
| | Quality | Quality | Quality | |
| | Human Resource | Human Resource | Organization | Organization, Resources |
| | Communication | Communication | | Communications |
| | Risk | Risk | Risk | Risk, Finance |
| | Procurement | Procurement | | Finance |
| | Stakeholder | Stakeholder | | Relationships |
| | | | | Value |

Also, between these guidelines and standards exist differences in terms of philosophy and terminology used. For example, if the PMBOK®Guide use the concept of "knowledge area", in PRINCE2 standard was replaced by the concept of "themes", in ISO 21500 with the "subject" in P2M with "domain". Unlike PMBOK®Guide, in PRINCE standard / method the notion of "stage" at the expense of the "phase" is used.

In terms of philosophy, approach, PMBOK®Guide and ISO 21500 standard are very similar. The Prince 2 standard/method is based more on product guide is based on P2M/KPM while the concept of "value" and on the mission-driven approach. If P2M/KPM is more dedicated to the business/program of management of projects, the PMBOK®Guide is more dedicated to the management of a single project.

## 4. CONCLUSIONS

Based on the experience and expertise gained in developing projects, in recent years have proposed a series of guidelines, standards and methodologies (methods) of project management. From the time of writing these guidelines, standards and methods and to date, they have undergone several changes and improvements to both form and substance. The new approaches in the project management field tend to become more comprehensive, more adaptable to the environmental changes.

Between a methodology and a standard there is a conceptual difference. While the standards provide guidance, the methodologies describe the processes used for managing projects. The methodology can be used like a standard. For example, the PRINCE 2 methodology can be adopted as a standard. On the other hand, many specialists consider that standards can't be used as methodologies (PMBOK can't be adopted as a methodology) [14, 15].

Even if between guidelines, standards and methodologies (methods) of project management there are many differences, their primary purpose is common: to provide the optimum framework, the best practice to manage project to success.

## 5. REFERENCES

[1] http://www.pmi.org/PMBOK-Guide-and-Standards.aspx (15.04.2013).

[2] http://ipma.ch/membership/member-associations (15.04.2013).
[3] http://www.pmaj.or.jp/ENG/index.htm (15.04.2013).
[4] Project Management Institute, A Guide to the Project Management Body of Knowledge (PMBOK®Guide), First Edition, Newtown Square, PA, USA, 1996.
[5] Project Management Institute, A Guide to the Project Management Body of Knowledge (PMBOK®Guide), Second Edition, Newtown Square, PA, USA, 2000.
[6] Project Management Institute, A Guide to the Project Management Body of Knowledge (PMBOK®Guide), Third Edition, Newtown Square, PA, USA, 2004.
[7] Project Management Institute, A Guide to the Project Management Body of Knowledge (PMBOK®Guide), Fourth Edition, Newtown Square, PA, USA, 2008.
[8] Project Management Institute, A Guide to the Project Management Body of Knowledge (PMBOK®Guide), Fifth Edition, Newtown Square, PA, USA, 2012.
[9] Office of Government Commerce, "Managing and Directing Successful Projects with PRINCE2 2009 Edition, The Stationery Office, 2009, UK.
[10] International Organization for Standardization, ISO 10006:2003, Quality management systems – Guidelines for quality management in projects, 2003.
[11] International Organization for Standardization, ISO 21500:2012, Guidance on project management, 2012.
[12] Siang, L.F., Yih, C.H., A review towards the new Japanese project management: P2M and KPM, Trends and Development in Management Studies, vol. 1, no. 1, 2012, p. 25-41.
[13] Monden Institute of Management, Japanese Project Management: KPM - Innovation, Development and Improvement, Japanese Management and International Studies, vol. 3, World Scientific Publishing Co. Pte. Ltd., 2009.
[14] Ilieş, L., Crişan, E., Mureşan, I.N., Best Practices in Project Management, Review of International Comparative Management, vol. 11, no. 1, 2010, p. 43-51.
[15] Drob, C., Analysis of the main international standards and guidelines about project risk management, Revista Economică – Journal of Economic-Financial Theory and Practice, Supplement no. 2, 2012, p. 100-104.