

PRINCE2[®], the *PMBOK[®] Guide* and ISO 21500:2012

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1 Introduction

Selecting the right project management certification can be confusing for practitioners as there are several that are internationally well known and established.

There are also different organizations' publishing standards and best practices that make it hard for organizations to select the way of working that best suits their needs.

This White Paper outlines similarities and differences in three of the most widespread and adopted standards and best practices in the world: ISO® 21500:2012 (ISO 21500), the *PMBOK® Guide* and PRINCE2®. For example, the *PMBOK® Guide* (and to some extent ISO 21500) is principally focused on the knowledge required by a project manager whereas PRINCE2 is more concerned with how to manage the whole project. The question is not which should I choose but how to use the complementary approaches to derive the maximum benefit from each.

In this paper, 'approach' is used as a common term to describe each of the practices and standards.

1.1 OVERALL BENEFITS OF STANDARDIZED APPROACHES

There are primarily two major benefits from using established approaches: reducing costs due to not having to develop an approach from scratch, with easier to find skilled resources, and improved internal communication and simplified trade due to standardized terminology.

1.2 OVERVIEW AND HISTORY OF PRINCE2, THE *PMBOK® GUIDE* AND ISO 21500

The three approaches have been developed by different organizations, for different purposes and targeted to different audiences. The *PMBOK® Guide* is the oldest of them, and was originally published by the Project Management Institute (PMI®) in 1987. It is updated periodically and is currently on the fifth edition. PRINCE was first published in 1990 with a focus on IT projects. It was revised for general project management and released as PRINCE2 in 1996 and significantly updated in the 2009 edition with defined sets of principles, themes and processes.

ISO 21500 is an international standard that was released in 2012 as a result of a joint effort from 30 countries.

Note that while the above approaches are compared here, both AXELOS and PMI have developed additional guidance for working with agile approaches but these are not directly included in this study. To that end:

- PMI has produced the "Software Extension to *PMBOK® Guide* Fifth Edition", which specifically addresses the challenges of translating the established approaches of the *PMBOK® Guide* with adaptive approaches such as agile that are more commonly used in software development.
- In 2015, AXELOS produced PRINCE2 Agile™ as an extension module for PRINCE2 to show how to blend agile approaches into all suitable project types in a way that is consistent with the PRINCE2 principles.

2 Relationships between PRINCE2, the *PMBOK® Guide* and ISO 21500

2.1 INTRODUCTION TO PRINCE2

PRINCE2 (PRojects IN Controlled Environments 2) is a process oriented project management method owned by AXELOS, the same organization that also owns PRINCE2 Agile, MOP®, MSP®, MOV®, M_o_R®, P3O®, P3M3®, ITIL® and RESILIA™. PRINCE2 is the most widespread project management approach in the world with over a million certifications taken globally to date.

PRINCE2 is easy to tailor to different projects and environments. It is a clearly defined framework with roles, responsibilities, principles and processes that are easy to learn and apply. PRINCE2 is open, flexible and its usage is growing quickly. In some countries, it is almost mandatory to be certified in PRINCE2 as a project manager, often due to the requirements from the public sector.

2.2 INTRODUCTION TO THE *PMBOK® GUIDE*

The *PMBOK® Guide* is a guide to the Project Management Institute's project management body of knowledge (PMBOK). The content should be applicable to most projects most of the time. Forty seven processes are described, with each having inputs, tools & techniques and outputs. The processes are divided into the following 10 knowledge areas: integration, scope, time, cost, quality, human resources, risk, communication, procurement and stakeholder.

2.3 INTRODUCTION TO ISO 21500

As an informative standard, it is not possible to get certified in ISO 21500 (as compared to normative standards like ISO 9001:2008). The ISO standard resembles the *PMBOK® Guide* but without the tools and techniques. It has 10 subject groups that perfectly reflect the 10 knowledge areas in the *PMBOK® Guide*. There are 40 processes spread out in these subject groups, and each process also belongs to one of five process groups.

2.4 THE BASIC RELATIONSHIPS BETWEEN THE APPROACHES

ISO 21500 works well with the *PMBOK® Guide*, and anyone familiar with either of them will immediately recognize the other. The *PMBOK® Guide* is more comprehensive than ISO 21500 due to the fact that it also describes each process in more detail and includes a description of the tools and techniques that not included in from the standard. The overview of the processes in Annex A1 of the *PMBOK® Guide* is the ANSI standard for project management.

By design the *PMBOK® Guide* looks at what a competent project manager ought to know and focuses on what and how to do it. Whereas PRINCE2 focuses more on the project management team and what they should do, although there are areas of overlap to some extent. Figure 2.1 illustrates the basic relationships between the three approaches.

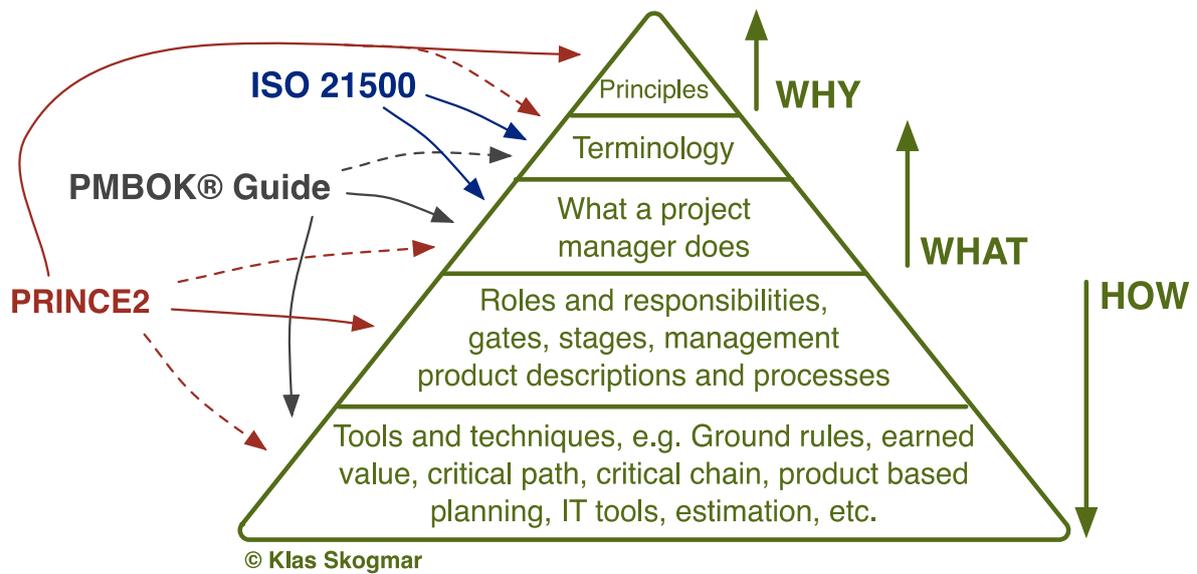


Figure 2.1 Basic relationships between approaches

In figure 2.1 the solid arrows show strong relationships where the dotted lines indicate weaker relationships.

As shown in the figure 2.1, the PMBOK® Guide provides both guidance to what a project manager should be doing, as well as some specific tools and techniques for doing so. But it skips a layer of how a project should be run, which would include defined roles and responsibilities, gates, product descriptions and the order of activities in processes. PRINCE2 on the other hand covers all of these, while also providing principles for project management. With the exceptions of product placed planning and quality review, PRINCE2 does not describe specific tools and techniques in detail as their use will depend on the project context.

PRINCE2 is built (or based) on seven principles, see table 2.1. All seven principles must be followed to use PRINCE2, even though the approach in other aspects can be modified heavily. A benefit of having principles is that they can always be referenced when in doubt of how to use PRINCE2.

PRINCE2 Principles

- Continued business justification
- Learn from experience
- Defined roles and responsibilities
- Manage by stages
- Manage by exception
- Focus on products
- Tailor to suit the project environment

Table 2.1 PRINCE2 principles

PRINCE2 and the PMBOK® Guide complement each other, since they have different areas of focus. The strength of PRINCE2 is that it provides a coherent end to end approach that is easy to learn and apply while strength of the PMBOK® Guide, is that it gives a library of techniques that can be applied regardless of the approach or method chosen. Which techniques are appropriate will depend on the organization and the nature of the project.

2.5 FEATURES OF EACH APPROACH

The following list highlights a few of the strengths of each approach:

- The *PMBOK® Guide* is independent to, and can be adopted regardless of, the methodology of choice
- The *PMBOK® Guide* is a well-established guide to the PMI standard with millions of copies sold worldwide
- The *PMBOK® Guide* provides a clear focus on what the project manager should do
- PRINCE2 is the most widespread method in the world
- PRINCE2 has defined project management principles
- PRINCE2 provides a clear governance structure including the relationship of the project board to corporate/programme management
- PRINCE2 protects the business justification for the project by focusing decisions on the business case
- ISO 21500 provides an internationally agreed terminology
- ISO 21500 can be complied with by adopting a recognized project management approach such as the *PMBOK® Guide* or PRINCE2.

3 Major differences between the approaches

Even though the approaches complement each other, there exist some differences between them. One of which is the view on the project constraints. ISO 21500 exemplifies constraints with: “scope, quality, schedule, resources and cost”. The *PMBOK® Guide* defines a constraint as a “limiting factor that affects the execution”, and could include scope, quality, schedule, budget, resources, and risks. PRINCE2 has a slightly different perspective, where constraints are clarified in terms of tolerances to be able to continuously manage the project by exception. If everything stays within the given tolerances, there is no need to worry. If any of the tolerances are expected to be exceeded, an exception is raised so that the situation can be acted upon. There are six tolerances in PRINCE2: time, cost, scope, risk, quality and benefits. It should be noted that PRINCE2 explicitly states that benefits are a constraint, since they link back to the original justification for the project in the business case; this may be simply put as the risk of not achieving the benefits.

3.1 PHASES/STAGES

ISO 21500 and the *PMBOK® Guide* both use the term ‘phase’, while it is called ‘stage’ in PRINCE2. The stage concept is elaborated in more detail where PRINCE2 describes the difference between management stages and specialist work. Management stages cannot overlap and are there to give the Executive greater control over the project. The *PMBOK® Guide* may appear somewhat abstract, as phases can be iterative or overlap and the practical consequences of phases are not detailed. The *PMBOK® Guide* categorizes project processes into ‘process groups’ – initiating, planning, executing, monitoring & controlling, and closing. Because of this, many readers confuse the process groups with phases.

3.2 BUSINESS CASE

One of the most important differences between each approach is in how they manage the business case. In the *PMBOK® Guide*, the business case is provided as input to the development of the Project Charter together with an optional contract, whereas in PRINCE2, the business case is continuously updated, and is considered a draft until the project has been planned and is then used through the project to check that it will deliver the benefits.

3.3 ORGANIZATION

The *PMBOK® Guide* does not define the organizational setup of a project. It describes the project manager and sponsor in some detail, but covers other roles in a more general way as project stakeholders. PRINCE2 on the other hand ensures that project governance and the three stakeholder interests of user, business and supplier are all specifically and appropriately represented. PRINCE2 also defines how to delegate and when and how reporting and escalation of issues should be made, from team manager through project manager, the project board and to the corporate management. PRINCE2 also defines supporting roles such as project support and project assurance.

3.4 SCOPE MANAGEMENT

In the *PMBOK® Guide*, the way scope is managed is to first collect and agree on requirements, then based on those, determine the scope and exclusions of the project as a whole before breaking the scope down into a work breakdown structure (WBS). The lowest level of the WBS, the work packages, are decomposed further into activities that are sequenced in a network diagram, which eventually is used to determine the critical path.

In PRINCE2, a similar approach is used, but there are some differences. PRINCE2 focuses even more on the actual outputs, or products, of the project. Initially an overview of the resulting product is described in a project product description, which includes acceptance criteria and the customer's quality expectations. This forms the basis for a product breakdown structure (PBS). The logical relationship of the items in the PBS is examined and a product flow diagram is developed with arrows indicating where activities are needed to go from one deliverable to the next.

Based on these definitions, a PBS can actually be considered a special kind of WBS. While at first glance these two approaches look very different they can be used together, providing multiple views on the project scope intended for different stakeholders. This can help ensure all products and all works have been covered.

3.5 QUALITY

Some differences in terminology can be illustrated by their definitions of quality. All three approaches use the terms quality assurance and quality control, but there are differences. Common principles are that reviewing the results, such as deliverables, internally within the project is always part of quality control, and reviewing processes from someone external to the project is always quality assurance. Differences arise on the internal review of processes and the external review of the results as illustrated in Table 3.1.

	ISO 21500		PMBOK® Guide		PRINCE2	
	Results	Processes	Results	Processes	Results	Processes
INTERNAL	Quality Control	?	Quality Control	Quality Assurance	Quality Control	Project Assurance
EXTERNAL	?	Quality Assurance	Quality Control	Quality Assurance	Quality Assurance	Quality Assurance

Table 3.1 Differences in quality terminology

It is important to understand these differences, and to select the definitions that are best suited to each organization's needs.

3.6 TERMINOLOGY AND DEFINITIONS

There are other differences in terminology such as with roles and documents. Some of the most important ones are shown in table 3.2.

ISO 21500	PMBOK® Guide	PRINCE2
Project sponsor	Project sponsor	Executive
Project charter	Project charter	Project brief
Project management plan	Project management plan	Project initiation documentation
Phase	Phase	Stage
Scope Statement	Project Scope Statement	Project Product Description
WBS	WBS	PBS
WBS Dictionary	WBS Dictionary	Product Description
Risk Register	Risk Register	Risk Register
Change register	Change Log	Issue register
Issues Log	Issue Log	Issue register
-	-	Team Manager
Project closure report	Project Closure documents	End project report
Progress report	Performance report	Highlight report, Checkpoint Report, End Stage Report

Table 3.2 Example differences in role and documentation terminology

4 Working with them together

Each of these approaches is written from a different perspective and they focus on different aspects of project management. PRINCE2 provides a clear single means of managing projects that can be tailored and scaled. It does not deal with topics such as soft-skills, procurement, cost, etc. which are assumed skills in PRINCE2 but which provide a focus for the project manager in the *PMBOK® Guide*. PRINCE2 is often favoured by organizations that want a standardized approach that can be readily learned and where specialists are on hand to run procurement activities. Whereas the *PMBOK® Guide* may be more suited to an environment where the project manager is the primary decision maker and has greater responsibility for human resources and procurement activities. In most situations the description of what to do and the detailed tools and techniques from the *PMBOK® Guide* together with PRINCE2's principles, governance arrangements, methods and product descriptions complement each other and can improve the way that projects are being managed. ISO 21500, in contrast, sets the standard to which these best/good practices should be applied. Where the adoption of PRINCE2 or the *PMBOK® Guide* goes a long way to help organizations meet this international standard using them together ensure much greater compliance.

5 Conclusions

Adoption of either PRINCE2 or the *PMBOK® Guide* can help an organization meet the requirements ISO 21500, but when used together they provide a complete package covering both knowledge and method:

1. A PRINCE2 project manager needs a body of knowledge to call upon in order to be a competent person – this can be the *PMBOK® Guide*
2. The *PMBOK® Guide* requires a method that the project management team can adopt – this can be PRINCE2
3. ISO21500 defines a standard against which project management methodologies are designed. This should guide an organization (or project team) for the adoption of both PRINCE2 and the *PMBOK® Guide*
4. Both PRINCE2 and the *PMBOK® Guide* require tailoring to the organization and type of project so that they provide an optimal approach in a variety of situations.

References and further reading

AXELOS. (2009) *Managing Successful Projects with PRINCE2® Fifth Edition*, TSO

AXELOS. (2015) *PRINCE2 Agile® First Edition*, TSO

PMI. (2013) *The PMBOK® Guide Fifth Edition*, Project Management Institute

PMI, (2013), *Software Extension to the PMBOK® Guide Fifth Edition*, Project Management Institute

ISO. (2012) *ISO 21500:2012 Guidance on project management*, ISO

Further information about PRINCE2 Agile can be found at:

<https://www.axelos.com/best-practice-solutions/prince2/prince2-agile>

AXELOS has published a White Paper covering PRINCE2® and the National and International Standards at:

<https://www.axelos.com/case-studies-and-white-papers/prince2-and-national-and-international-standards>

About the author

AXELOS is grateful to the author Klas Skogmar of Arkatay Consulting , who is a PMI R.E.P. trainer, PRINCE2 certified trainer and member of the Swedish ISO standardization committee for project, programme and portfolio management.

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About AXELOS

AXELOS is a joint venture company, created by the Cabinet Office on behalf of Her Majesty's Government (HMG) in the United Kingdom and Capita plc to run the Global Best Practice portfolio. It boasts an already enviable track record and an unmatched portfolio of products, including ITIL®, PRINCE2® and RESILIA™. RESILIA is the new Cyber Resilience Best Practice portfolio.

Used in the private, public and voluntary sectors in more than 180 countries worldwide, the Global Best Practice products have long been associated with achievement, heightened standards and truly measurable improved quality.

AXELOS has an ambitious programme of investment for developing innovative solutions and stimulating the growth of a vibrant, open international ecosystem of training, consultancy and examination organizations. Developments to the portfolio also include the launch of PRINCE2 Agile™, the ITIL Practitioner qualification and a professional development programme for practitioners, fully aligned with AXELOS Global Best Practice.

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