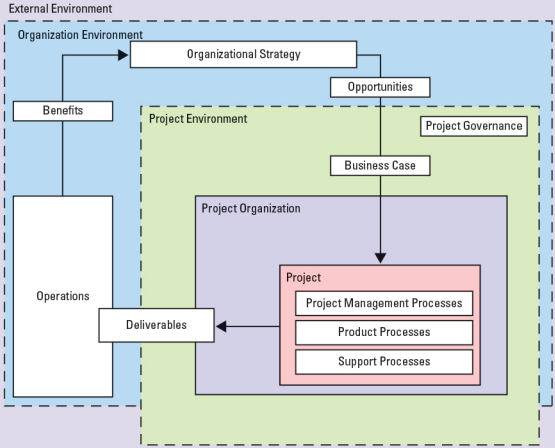
BEST PRACTICE

ISO 21500

Guidance on project management

A Pocket Guide



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ISO 21500
GUIDANCE ON PROJECT MANAGEMENT
A POCKET GUIDE

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ISO 21500

Guidance on project management

A POCKET GUIDE

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Colophon

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Preface

Project management is one of the key skill sets demanded by organizations around the world. Some facts:

- One-fifth of the world's GDP, or more than $12 trillion, will be spent on projects each year in the decade 2010-2020[1].
- In the coming years many skilled project management practitioners will be leaving the workforce due to retirement — a trend which will have a major strategic impact for over 60% of the organizations worldwide[2].

Consequently there is a great demand for knowledgeable project managers.

The intention of this pocket guide is to provide you with a quick introduction to one of the latest developments in the project management profession: ISO 21500 'Guidance on project management' being the *first really globally accepted standard on project management*. This guide contains a brief and straightforward introduction and high level summary of ISO 21500, with tips for its practical application. It is therefore key knowledge for a project manager who is ready for the future.

It will enable and support you, your organization and all project stakeholders to speak 'one language' in project environments, even cross-borders, with multiple nationalities and multiple organizations involved. It will explain ISO 21500, its background and its practical application.

In 2006 ISO recognized the organizational need for knowledgeable project managers and decided that organizations could benefit from some guidance in this area. An international

team of over one hundred experts in project management worked for five years to develop a globally accepted guideline on project management. This development didn't start from scratch; instead it integrated the knowledge from reputable representatives in the project management profession from all over the world, like PMI and IPMA. All this work resulted in a rather slim document. However the impact of ISO 21500 on the project management profession is huge. Committing to ISO 21500 means that all of the stakeholders in project environments speak the same language and work with the same 'big picture' in mind, thus improving communication. ISO 21500 is, therefore, a fundamental input when cooperating in projects and jointly striving for project success.

With ISO 21500 being the first guidance on project management that is accepted and recognized by most of the international organizations which represent and contribute to the project management profession, it will become the *key reference* for future developments in this profession. This fact is already confirmed by e.g. the latest (fifth) edition of PMI's PMBOK Guide (2013), which shares exactly the same structure with only slightly different names for some processes, and which overlaps with more than 95% of the processes mentioned in ISO 21500. Other globally applied standards, like IPMA's Competency Baseline 4.0 (due in Autumn 2014), already plan to follow the same direction.

Is it important for you to know? Well, nowadays every organization has projects, whether formally recognized as such or not. Projects are mostly aimed at achieving new organizational capabilities, for meeting new demands, driven by the increased pace of change in the organization's environment, or for realizing

new opportunities. So it is more than likely that at some point in time during your professional career you will have a role to play in these projects. For that reason it is important for you to have some basic understanding of project management. No matter what your role in the project is, project manager, project sponsor, project team member: all stakeholders speaking the same language in projects is key to facilitating communication, and increasing the speed, quality and chances of project delivery.

We would also like to underline that all these projects represent large investments by organizations, as we have mentioned in the beginning. But moreover, think about the time and effort spent by scarce resources. For organizations it has become essential to deliver their projects successfully to ensure a sustainable future. That takes more than a skilled, experienced, knowledgeable and competent project manager. It requires basic project management knowledge from all project stakeholders and some well-defined processes, applied in practice, to facilitate real cooperation and ensure realizing the drive to make it happen. If this teamwork is based on a (well) defined, shared and well understood approach, it will increase the success rate of projects, delivering or even exceeding the expected benefits.

We encourage you, your project management community and project stakeholders collectively, to become familiar with ISO 21500, its concepts, subject groups (themes) and its processes, in order to increase successful project delivery!

May 2013,

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We are grateful for the cooperation of BSI and their permission to use parts of the BS ISO 21500:2012 document.

We have been inspired by some of the analysis work of the 'ISO 21500 interest group' especially for chapter 7, where we compare ISO 21500 with other standards and methods. This interest group was initially formed in 2009 to review the usability of the forthcoming ISO 21500 guideline in the Netherlands, and is sponsored by IPMA-NL and PMI Netherlands Chapter. Given the enthusiasm of its members for the development of the project management profession, and the open discussions and sharing of ideas and insights, it is now continuing as 'ISO for projects' in order to further contribute to the promotion and practical implementation of the ISO 21500 guideline, as well as to assess the application of the new ISO documents for program and portfolio management and for project governance, which are all under development at the time of writing.

We also appreciate that the reviewers spent time to read our manuscript and forward their comments to us. We have incorporated their valuable input where applicable in the final manuscript.

And last but not least, we would like to thank our partners and children for not complaining when we could not share quality time with them because of our commitment to the planning and the writing of this book.

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1 Introduction

1.1 Purpose of this pocket guide to ISO 21500

ISO 21500 provides **generic guidance on the concepts and processes of project management** that are important for the successful realization of projects. This pocket guide is intended as a brief reference to assist in quickly understanding the purpose, background and key elements.

What is the value of ISO 21500? This new globally accepted project management standard is recognized as a foundational reference for the application of project management knowledge and good practices. Research has confirmed that, when managing projects, the structured application of this fundamental knowledge and good practices clearly enhances successful delivery. Project environments that consistently apply this fundamental project management good practice approach not only show better project performance in terms of lower costs and shorter delivery times, but they also demonstrate higher levels of customer satisfaction. The application of the project management good practices, as described in ISO 21500, will support you in realizing these benefits.

In addition to the above, when working in a project management environment, for which the organization is far more dynamic than 'normal' operations, there is an increased need for good communication. To achieve this, it is important to use 'one common language' within your project management environment, which is understood by everyone involved, particularly the key stakeholders of the project. This pocket guide aims to quickly establish a shared vocabulary and terminology on the project management fundamentals and create a common

understanding about the basic project management processes together with the key roles and responsibilities. Moreover the guide provides a high level description of how the ISO 21500 guideline can be applied in practice, using a 'generic' project life cycle as a reference.

What it's not? It is definitely not 'the' solution for all challenges when managing projects. The project manager and the team remain ultimately responsible for deciding what good practices shall be applied to the specific project at hand, in close cooperation with the project sponsor and the management of the line organization or sponsoring entity.

In a nutshell, this pocket guide is intended as a key contributor and tangible asset when introducing and reinforcing concepts of project management in your organization for improved communication and cooperation. It supports an organization-wide implementation of a project management culture, bringing you the benefits of 'your projects executed right the first time'! At the organizational level this can be enhanced by implementing a project management approach, based on these good practices.

1.2 Practical tips for using this pocket guide

On the fold out at the back cover of this book, all subject areas and applicable processes and chapter numbers are listed. Key project management terms and definitions are explained in the Glossary of the ISO 21500 terminology, in Appendix B.

1.3 Why apply project management?

Every organization has its unique culture and faces diverse challenges. Also, organizations start with a different situation and set of problems to be resolved. In order to define the value

of project management, we firstly need to define exactly what is meant by project management, as this is a broad concept. Then we can look at the various aspects of project management and show the value associated with each aspect.

Project management – ISO 21500 definition:
Project management is the application of methods, tools, techniques and competences to a project. Project management includes the integration of the various phases of the project life cycle. Project management is accomplished through processes.

Research shows that, with the increasing complexity and faster changing environments that businesses are faced with, projects managed by the structured application of good practice-based processes show consistently better performance in areas such as, but not limited to:

- 'Deliver as promised' by realistic expectation-setting through up-front project definition, planning, and estimation;
- Faster delivery through the reuse of common and known project management processes;
- Less 'surprises' during project execution, utilizing proactive project management processes;
- Improved customer satisfaction and less rework by delivering the right product or service, right, the first time.

These opportunities together with the savings offered by organizational project management excellence are all tangible. But the value proposition for project management is much greater and also includes less tangible benefits like:

- A highly committed and motivated team that can work together through effective communication and goal setting;

- An inspiring project environment with a 'can-do' mentality through ambitious yet realistic commitments;
- Transparent and improved decision-making at all organizational levels through more effective communication.

These qualitative benefits will even reinforce the quantitative advantages, which will guarantee that an organization is able to excel.

Many organizations have built a good reputation for being able to consistently deliver top quality projects. However, a majority of organizations are still struggling with this. Do you recognize the following characteristics?

- Projects mostly deliver late, over-budget, or without meeting the functionality requirements of the project sponsor and end-users;
- Project managers do it 'their way' as there are no, or poor, standards for project management processes and techniques;
- Project management is regarded as an overhead instead of being recognized as providing business value;
- The project work undertaken by resources from within the line organization is not carefully planned for as part of the operations planning, but is typically regarded as 'next to your primary function';
- Project budgets do not include the cost of the internal workforce as they are 'already paid for';
- There is no overall insight available on all the projects being undertaken in the organization, nor their cost versus the added value;

- The required work for managing projects proactively is not included in the project plan;
- Projects may be somehow 'successful' in the end but only through heavy stress and overtime work.

Do you recognize the above in your project environments? Having more disciplined project management is the way to overcome these shortcomings. The value of a good project management practice, using common project management processes, will enable better communication to deal with contingencies pro-actively. This will substantially and continuously increase the chances of project success. It will establish new management procedures and processes. It will enable you to run your organization as an economic enterprise.

1.4 Successfully fulfilling your role as project sponsor, project manager or project team member

Understanding your role in a project and acting accordingly is vital for project success. Therefore we highlight the three key roles which are the major contributors in realizing a successful project:

1 The **project sponsor** acts as the continuous link between the funding organization(s) and the project. It is the sponsor who is responsible at the start for defining the Business case for the project; why should we be doing this project; what are the organization's needs? When the project is approved, the project manager takes over the responsibility for 'delivery

of the defined project objective'. The sponsor still fulfills an ever- important role for ensuring the project objective is aligned to the project goal. The sponsor should, amongst other things, ensure that the organization sticks to its initial decisions regarding goal setting, thus preventing constant priority changes based on daily operational issues. The project sponsor, therefore, plays an important role in ensuring that there is sufficient support from functional and operational management, which in turn fulfills a key role in assigning the appropriate resources to the project team. The sponsor should also support the organization's readiness to effectively deal with the project objective when it is delivered, as this is where the benefits realization, and consequently increased business value, will start. In order to achieve this, the project sponsor must work closely together with the project manager. The fluent communication between these two roles is crucial for both the project and organizational success.

2 The **project manager** is ultimately responsible for the delivery of the defined project objective. Key elements in this role are stakeholder management, and guiding the project team and the appropriate stakeholders in selecting and applying the right project management processes at the right time. But everything must be undertaken with an eye on the delivery of the project objective. The project manager must take advantage of the project sponsor's business knowledge and influential position, and escalate all issues or business- related problems that cannot be solved by the project management team.

3 The **project (management) team member** is typically responsible for delivering the expertise and work needed

to create the project result. During the initial phases of the project, their focus is on defining the best approach and developing a feasible high-level plan for the project; in other words, the planning. During the execution phases, based on their expertise, they realize the project objective and specific subcomponents. It is essential to ensure that the organization which takes over the responsibilities at the end of the project is adequately represented within the project team. This will facilitate a smoother transition of the project objective to the operational or sponsoring organization.

In every project these key roles that are needed for the successful delivery of the project should be clearly described and understood, so that all stakeholders can act accordingly.

Figure 1.1 clearly describes the common relationships between the sponsor organization/entity and the project organization, and shows where each role is positioned.

Note: The sponsor organization/entity should be interpreted in the widest sense to cater for the differences in the various environments in which projects are undertaken.

Projects can run in one single organization, such as one company, business or governmental department. In that case the project results (or deliverables) are normally accepted by Operations in the line organization. However, projects can also be executed by more than one organization (e.g. a joint venture) or in the case of large investment projects they can act more or less independently, like a temporary organization (e.g. for the construction of a railway). In the latter cases we do not have a single sponsor organization, but a sponsor entity, that eventually accepts the

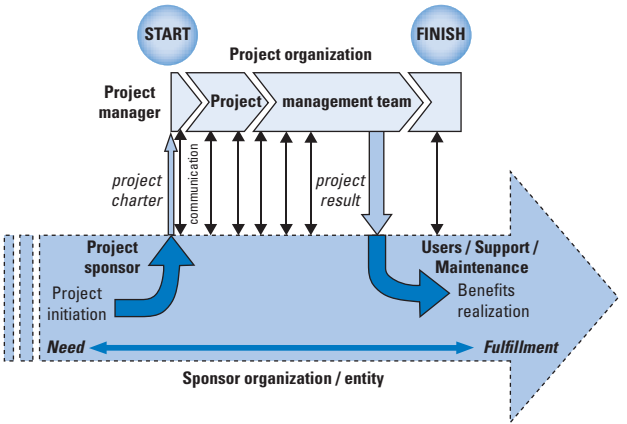

Figure 1.1 Common relationships between sponsor organization/entity and project organization

project results. Clearly the project governance is also more complex in the latter cases.

1.5 Frequently asked questions

We have identified some typical questions that one could ask when first confronted with project management or the ISO 21500 guideline.

What is a project?

Project – ISO 21500 definition:
A project is a unique set of processes consisting of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective. Achievement of the project objective requires deliverables conforming to specific requirements, including multiple constraints such as time, cost and resources.

- This means: It has a defined start and finish, therefore a project is temporary;
- 'Something' is finished when the project is finished; it creates an end deliverable, the project objective;
- It is not business as usual, and as a consequence does not follow normal procedures, because there is something unique to it;
- Given the above, it needs a specific organization for the coordination and control of this unique set of processes.

Although within an organization some projects may be similar, each project is actually unique as differences may occur e.g. in the deliverables provided by the project, the stakeholders influencing the project, the resources used, the way processes are adapted to create the deliverables, etc.. Because there are projects of all types and levels of complexity, the project management activities and the underlying processes should be geared to the project at hand. But it's the organization's responsibility to firstly decide if the desired objective should be realized through undertaking a project. If that is the case, then the project should be organized accordingly.

Is 'project management' a profession?

While there is no agreed definition of a 'profession', you could describe it as:

'A disciplined group of individuals who adhere to defined ethical standards and uphold themselves to the public as having specific knowledge and skills in a generally recognized, organized body of learning, derived from education and training, and who apply this knowledge and these skills in the interest of others.'

With projects getting more and more complex, the demands on a project manager's competence are also increasing. For example, everyone can apply a bandage to a wound but that does not make everyone a doctor. The need to obtain specific skills, knowledge and education, in order to successfully fulfill the role of project manager, is generally recognized. This is even confirmed in the academic world where Masters degrees in project management are now available.

Characteristics of a professional discipline also include the use of a common vocabulary. The ISO 21500 terms and definitions provide a foundational professional vocabulary of specific project management terms, in addition to commonly used terminology, which is already defined in the Oxford Dictionary.

Given the fact that, due to the ISO processes being followed for the creation and global acceptance of the content of ISO 21500, apparently there is consensus about what can be regarded as a set of foundational:

- Terms and definitions;
- Concepts, including competences;
- Processes.

ISO 21500 also states that successful management of projects requires people who are competent in project management principles and processes. ISO 21500 defines, but does not limit, at least three categories of project management competences which are needed in order to apply project management:

- Technical competences, for delivering projects through applying the project management processes in a structured way;
- Behavioral competences which refer to the capabilities required to build and reinforce relationships, beneficial to the project, within the organizational environment;
- Contextual competences, which relate to adjusting the project management processes to the organizational environment.

One can, therefore, safely conclude that 'project management' has matured into a profession.

Can you manage a line organization (operations) effectively without projects?

Line organizations are typically function-centric and, in general, focus on ongoing day-to-day operations, while 'doing their thing better'. Operations can therefore become resistant to (major) changes, particularly when the driver for such a change lies outside their own functional responsibilities and needs.

Projects and project management, on the other hand, are all about implementing necessary changes in operations, in order to stay in business. The realization of the project's objective and its application in operations might even threaten the effectiveness and efficiency of specific operational entities (e.g. departments, business units), but is nevertheless executed to enable whole organization to perform more effectively.

And the reality is that hardly any organization can survive in today's environment without having projects. At times they are not formally recognized but organizations undertake them anyway. The increasing number of 'reorganizations' reflect this, with a constant drive for ensuring that the line organization keeps up with the increasingly complex and ever-faster changes in the environment. The increasing number and scope of changes, as well as the risks associated with these, are demanding greater focus and attention on projects, together with the need for a more professional approach towards project management. This is because this type of professional approach ensures that the changes are delivered and managed in an appropriate way. It will support line organizations in continuing to 'do the right thing, the best way' and getting ahead.

What is the purpose of ISO 21500?

ISO 21500 describes a professional approach towards project management, which is applicable to most projects, most of the time. It is, therefore, very likely that your projects can benefit from it. This approach is based on its proven value and benefits in practice, through the contribution of hundreds of experts in the project management profession, from all over the world, who base their expertise on the experiences of thousands of project practitioners worldwide in conjunction with in-depth studies. Making this knowledge available to a wider audience, in a well structured and easy to understand way has been the key-driver for developing this standard; for the aim is improved communication and cooperation in projects environments, thus increasing project success.

Is ISO 21500 a method or methodology?

ISO 21500 is referred to as an informative standard; a guideline. A guideline can be defined as a basic conceptual structure to allow homogeneous handling of different business processes grouped together. It also increases management discipline. It pre-defines common deliverables to and from each business process. A guideline provides a model with a well-defined tactic to master the complex environment of an organization in a simple fashion. It acts as a taxonomy or map of the entire body of project management knowledge.

A method is defined as a particular procedure for accomplishing or approaching something, especially a systematic or established one[3]. A method not only mentions the process, but also describes how a task is completed; a more detailed prescribed way to execute the processes.

A methodology is defined as a system of methods used in a particular area of study or activity[4].

Being a basic reference ISO 21500 is a guideline rather than a method or methodology. Although the common project management processes are described (the 'what'), they do not prescribe the exact way of doing (the 'how'). In practice, for the implementation of this guideline, several project management methods and methodologies can be defined and applied, and then fine-tuned towards the application area and specific subject of the projects. But before one can select, define, or apply any project management method or methodology, there should first be a thorough and common understanding of the project management terms and definitions, concepts and processes.

What if you want to know more about ISO 21500?
Creating a shared view, a common structure, and then consistently building on that, is essential for clear and concise communication. For this reason we have simply maintained the well-considered structure of ISO 21500 as defined in table 2.1. When looking for a more detailed explanation and understanding about a certain process, we simply refer to the related chapter and section number in ISO 21500.

Can you get certified on ISO 21500 as an organization?
Certification, also known as third party conformity assessment, is the provision by an independent body of written assurance (a certificate) that the product, service or system in question meets specific requirements. Many companies and organizations decide to get certified to one of ISO's management system standards, such as ISO 9001 as a way of showing outsiders that the organization has an effective quality management system in place.

As ISO 21500 is an organizational standard, with currently the status of a guideline or 'informative standard' one cannot obtain an ISO certification (like with ISO 9001). It is expected that over time, when the market shows an interest, the guideline can be upgraded to a 'normative standard'. In that case organizations can be certified by nationally acknowledged accreditation bodies. In the meantime, however, organizations can perform a 'self-assessment' (see section 2.7 and Annex A).

Can you get certified on ISO 21500 as an individual?
Because ISO 21500 as 'informative standard' now, or 'normative standard' in the future, is aiming at organizations and not at individuals, individual certification is not possible.

However there is a globally recognized individual certification track, organized by PMI, using A Guide to the Project Management Body of Knowledge (*PMBOK® Guide*) as a reference. There is huge similarity in the structure and content of ISO 21500 and the PMBOK Guide:

- The 10 Subject groups in ISO 21500, are equal but called knowledge areas in the PMBOK Guide;
- 39 project management processes in ISO 21500 versus 47 in the PMBOK Guide, however only with slightly different naming and some processes further detailed in the PMBOK Guide, thus leading to a higher number.

PMI uses the PMBOK Guide (and therefore essentially ISO 21500) as a basis for its globally recognized individual Project Management certifications for the typical project manager roles: Certified Associate in Project Management (CAPM) and the Project Management Professional (PMP). Based on the above, one can safely conclude that a PMI certified project manager (PMP) not only understands the ISO 21500 concepts, but is able to apply these in practice as well. PMI does not issue organizational certifications in the same way as ISO or ANSI, however PMI does offer Organization Project Management Maturity Model (OPM3) as an assessment method for organizations.

Also IPMA maintains an individual certification track, which uses the three competence areas as a reference (further detailed in chapter 5). Within these three areas more detailed competences are defined, including possible process steps. Most of these competences clearly relate to the ten Subject groups as defined in ISO 21500. Other competences are more related to methodologies which are not part of ISO 21500. IPMA also

does not issue organizational certifications in the same way as ISO or ANSI. However IPMA is developing IPMA Delta as a project management assessment for the entire organization, due Autumn 2013.

How can ISO 21500 support you in real-life application?
As ISO 21500 is based on globally recognized and accepted good practices, it can effectively act as a 'foundational worldwide lessons learned database' for project management. Based on its structure and well defined processes, it will definitely turn the mind-set in organizations from an 'ad-hoc' and fire-fighting mode (reactive management), which is still too often experienced in projects, towards a more proactively oriented and well organized approach (project management). It enables you, your project team and project stakeholders, when faced with challenging project situations, to proactively refer to the appropriate project management processes and fine-tune these to your project.
It directly enhances project communications by creating a common understanding of 'projects', 'a shared vision on how to best manage these', resulting in a shared project management approach for successful team work.

How does ISO 21500 align with other methods, practices and models?
ISO 21500 provides a guideline that is generally accepted as global good practice for project management. Therefore it is a perfect guideline for creating and understanding your organizational project management approach, which needs to fit with your specific projects in your specific environment. This is typically where the project management processes and the content creation processes should be integrated.

'Drowning' people in several different approaches, with different backgrounds and definitions and having each individual doing their own 'integration exercise', is likely to cause confusion, errors and miscommunication, as well as being inefficient. A well-organized comparison of the processes, terms and definitions of ISO 21500 with the processes, terms and definitions of other methods, practices and models applied in your organization, will enable a quick identification of any potential overlap, and enable effective integration in an appropriate way. In Chapter 7 we provide additional insights into how ISO 21500 compares to other commonly used project management methods, practices and models.

How does ISO 21500 address the different organizational entities and levels?

Organizations develop procedures for delivering results in a predictable way that allow them to manage expectations. However, as most projects are cross-functional, several organizational entities typically come together in projects and are required to deal with situations not encountered before, and for which no procedures are defined (as yet). When projects result in changes in organizations, different stakeholders are involved at different organizational levels, i.e. operations level, tactical level, and even strategic level. Therefore the understanding and application of a common organization-wide reference for managing projects, such as ISO 21500, is of particular value in such situations. In separate sections of the concepts in Clause 3, ISO 21500 addresses 'Organizational strategy and projects', 'the Project environment', 'Project governance' and 'Projects' and 'Operations' as well as how these can interact.

Is ISO 21500 likely to supersede your current (perhaps organizationally developed) project management method or practice?

Organizationally developed project management methods and practices typically stem from a recognized need for improvement in the application of project management, based on organizational experiences and good practices. As ISO 21500 is also quite often based on the same, practices, the majority of your own project management method will not drastically change. However, maintaining your own developed good practices, as well as ensuring continuous alignment with the latest developments in the project management profession and possible changes in your environment, or internal processes can become very costly and time consuming. This could be a key driver for organizations to switch to ISO 21500 as their basic reference for a project management method or practice and only adjust this where necessary for their specific projects and environments, and document these changes or additions transparently. Following the Pareto rule; around 80% of the guideline is likely to be generally applicable to your type of projects. This allows a focus on the specific 20% of the project management processes that form the uniqueness of your specific organization and project environment. This then becomes the heart of your own project management method or practice.

The generic publicly available project management methods, practices and models are now starting to point to ISO 21500 as a basic reference (PMI's PMBOK Guide – Fifth Edition, January 2013; IPMA's ICB version 4.0, due Autumn 2014; IPMA Delta - project management assessment for the entire organization -, due Autumn 2013; The GPM Reference Guide

to Sustainability in Project Management[5], January 2013). In such cases the knowledge contained in ISO 21500 substantially supports the better understanding and positioning of these project management methods, practices and models, thus reinforcing the correct application.

What if I need more information?

As this is a pocket guide, it should be viewed as an introduction to and summary of ISO 21500. Many more details and explanations on certain topics can be found on the ISO website, or more specifically in the document ISO 21500:2012 Guidance on project management, or the national version of this.

2 ISO 21500 background and overview

This chapter describes the ISO organization, the development process of its standards and the background, benefits, structure and future of the ISO 21500 document.

2.1 ISO organization

ISO (International Organization for Standardization) is the world's largest developer of voluntary international standards. It was founded in 1947 and since then has published over 19,000 international standards, which give state of the art specifications for products, services and good practice, helping to make industry more efficient and effective. ISO is a network of national standards bodies in 164 countries, which make up the ISO membership and represent ISO in their country.

ISO mission:

- 'The mission of ISO is to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing cooperation in the spheres of intellectual, scientific, technological and economic activity.'

ISO objectives:

- 'Conformity assessment': checking that products, materials, services, systems, processes or people measure up to the specifications of a relevant standard or specification. Today, many products require testing for conformity

with specifications or compliance with safety, or other regulations before they can be put on many markets. ISO guides and standards for conformity assessment represent an international consensus on best practice. Their use contributes to the consistency of conformity assessment worldwide and so facilitates trade.

- 'Certification': ISO does not carry out accreditation or certification to any of its standards; there exist many testing laboratories and certification bodies which offer independent conformity assessment services.

2.2 ISO standards development process

Via the national standards bodies, subject matter experts from all over the world participate in the standards development through a global, open and transparent process aimed at achieving consensus. The forming of a shared view on the contents of a standard is a long process, but this means in the end that the ISO standards are widely supported.

The development process is organized via:

- Project or technical committees, which formulate the scope of the standards and organize meetings with international experts to discuss and write the contents of the standards and process the received comments;
- National mirror committees, which appoint subject matter experts to take part in the development and comment on the draft standards.

On average, developing an international standard takes approximately four years.

2.3 ISO standard versus guideline

ISO develops international standards. A standard is a voluntary agreement between stakeholders on a product, service, result or process. The agreements contain terms and definitions, functional and performance related requirements, processes, measuring methods and good practices.

Two kinds of standards exist:

- Of *descriptive* (informative) nature;
- Of *prescriptive* (normative) nature.

If one talks about a *standard* one normally means the prescriptive standard. A descriptive standard is often called a *guideline*. A guideline presents the course of action with regard to the demands of goods, services and people. A guideline does not specifically describe what to do, that is the goal of a prescriptive standard. Prescriptive standards are often the next logical step, after descriptive standards have been implemented in organizations and have globally been accepted as a good practice.

2.4 Background of ISO 21500

This section discusses the economic driver for developing ISO 21500, along with the process and the sources which have been used for its creation.

The economic driver to develop ISO 21500

One-fifth of the world's GDP, or more than $12 trillion, will be spent on projects each year in the next decade[1]. This is an enormous investment, which calls for prudent spending and proper management control.

Since the industrial revolution, standardization has been an important prerequisite for growth. Recent research indicates that today's businesses face economic pressure from clients and other stakeholders to meet their needs faster and more cheaply than ever[6].

In today's world, investments and organizational changes are realized via projects and programs of related projects. For many of these projects a variety of disciplines and a mix of internal and external workers are involved. All these people need to cooperate in a proper way, everyone has to carry out his/her tasks effectively and, at the same time, all this work must be aligned and executed in a process-driven way. A great number of project management methods and practices exist. Who can apply these properly? Which method should be chosen in a multidisciplinary project? How does one communicate with the stakeholders? These questions do not have easy answers.

In the past there have been a number of initiatives aimed at developing global project management standards, like Global Project Management Forum (from 1994), PMBOK Guide (ANSI standard, First Edition in 1996), Operational Level Coordination Initiative (OLCI, from 1999), Global Alliance for Project Performance Standards (GAPPS, from 2002) and ISO 10006 – Quality management systems – Guidelines for quality management in projects, 2003). They all failed to produce one body of project management knowledge that was accepted globally. ISO 21500 – Guidance for project management is the step towards the true world standard for project management.

The development process of ISO 21500

In 2006 the United Kingdom submitted a proposal to develop a new international standard for project management, which later became known as ISO 21500. With the forthcoming 2012 Olympic Games in London they realized that their current standard developed by the BSI (British Standards Institution) needed a revision. The United States supported this proposal and it went for ballot to the 164 countries that have an ISO representation. A majority of ISO members voted positively and the ISO/PC (Project Committee) 236 was established at a meeting in October 2007 in London with the charter to develop the standard.

Hundreds of project management experts and their mirror committees from more than 30 countries have co-operated during the five years of its completion. The participants have discussed the contents, wrote the body text and processed more than 1,000 comments that came up per draft version. An international project team that worked very well together came into being, because the same 80 – 100 delegates participated in the various international meetings.

The large project management associations were involved in various ways. PMI (Project Management Institute) was the secretary of ISO/PC 236. IPMA (International Project Management Association) formally took part in the development in a liaison role. There was no noticeable representation of UK's Cabinet Office (owner of PRINCE2). Of course, a number of experts in the working group were also members of these associations or holders of their professional certifications and have represented the associations' views via their involvements.

The sources for ISO 21500 development

ISO 21500 has a broad target audience that uses various sources for project management. Therefore, the support for the guideline – first by its developers and later by its users – had to be the core of project management that is relevant for everybody. All country mirror committees had the opportunity to bring in relevant sources of project management as input for the guideline at the start of its development in 2007. They proposed the following national standards:

1 A Guide to the Project Management Body of Knowledge (*PMBOK® Guide*)-Third Edition, Chapter 3 and Glossary, PMI Inc., 2004 – the American ANSI standard;
2 DIN 69901 Project Management: Project Management Systems, DIN, 2007 – the German DIN standard;
3 BS 6079 and BS ISO 15188:2001 – Project management, BSI, 2001 – the English BSI standard.

In the course of the ISO 21500 development other market standards and existing ISO standards have been used as reference materials:

1 ICB version 3.0 (IPMA Competence Baseline) – by International Project Management Association;
2 PRINCE2 (PRojects IN Controlled Environments) – by Cabinet Office, previously OGC;
3 ISO 9001 – Quality management systems;
4 ISO 10006 – Quality management systems – Guidelines for quality management in projects;
5 ISO 31000 – Risk management – Principles and guidelines.

The benefits of ISO 21500

The ISO 21500 guideline is not a new project management standard, but a reference for other project management

standards, methods and best practices, such as PMBOK, PRINCE2, Agile and ICB. It does not compare one against the other, but brings the best project management practices together.

The importance of ISO 21500 is that it introduces one global standard and language for the project management practice. It is overarching and a reference point for all projects in all organizations.

One can use the ISO 21500 guideline as follows:

- *As a reference in an audit*
  If an organization's project management practice complies with the requirements and criteria of ISO 21500, it has a good foundation for competent project managers to achieve proper project results. At the same time, the organization can prove both internally and externally that it delivers quality projects, because they have based it on the independent standard. Indeed, this guideline does have direct influence on the *project execution*, but not on the *project result* as such;

- *As a link between different project management and business processes*
  ISO 21500 can supplement the ISO 9001 for quality management, especially in the area of continuous improvement: realizing the necessary and wanted improvement processes in operations with minimal disturbance of the production and service processes;

- *As a checklist to prove the knowledge and skills of project managers and project workers in executing projects*
  The guideline looks at one project at a time. It does not refer to more complex situations, like multi-project management

or sub-projects. This makes the guideline accessible for a broad target group, who can simply relate their own role to the guideline. ISO 21500 strongly emphasizes the role that the environment plays during the execution of the project in order to maximize the added value of the deliverables of the project;

- *As a common reference (bridge function) between different methods, practices and models*
  Existing project management methods like PRINCE2, collections of good practices like the PMBOK Guide, and competence models like ICB 3.0, provide an anchor to the project manager when running a project. A concise and clear guideline will attract parties that are not familiar with these existing methods, practices and models;

- *As a common language in project management*
  ISO 21500 bridges the differences and reinforces the similarities between the many parties that often work together in a project: sponsor, project manager and his colleagues, project organization, project workers, customers, users and/or the internal organization. ISO 21500 supports the communication between the related parties by offering a common language. A common language is also essential with international and/or multi-disciplinary projects, where different teams work with different methods, and where cooperation is necessary. The guideline can then be a binding factor by relating the processes and deliverables of the different methods to those of ISO 21500.

2.5 The contents of ISO 21500

This section highlights the scope and the structure of the ISO 21500 contents.

The scope of ISO 21500

The scope of ISO 21500 is to provide guidance for project management and may be used by any type of organization and for any type of project.

The guideline provides a high-level description of concepts and processes that are considered to form good practice in project management.

Projects are defined in the context of programs and project portfolios. Guidance on their management will be the subject of separate ISO standards.

The structure of ISO 21500

The guideline is structured as follows:

- Clause 1 Scope;
- Clause 2 Terms and definitions;
- Clause 3 Project management concepts;
- Clause 4 Project management processes;
- Annex A (Informative) Process group processes mapped to subject groups.

Clause 1 covers the scope of ISO 21500, i.e. the management of projects in 'most organizations most of the time'.

Clause 2 contains 16 project management terms and their definitions. It contains only those specific terms that from a project management practice viewpoint are not properly defined in the standard lists of ISO definitions or in the Oxford English Dictionary. The glossary in Annex B of this pocket guide presents this list of terms and definitions.

Clause 3 describes the concepts which play an important role during the execution of most projects:

- Project;
- Project management;
- Organizational strategy and projects;
- Project environment;
- Project governance;
- Projects and operations;
- Stakeholders and project organization;
- Competences of project personnel;
- Project life cycle;
- Project constraints;
- Relationship between project management concepts and processes.

These concepts and their relationships are shown in figure 2.1.

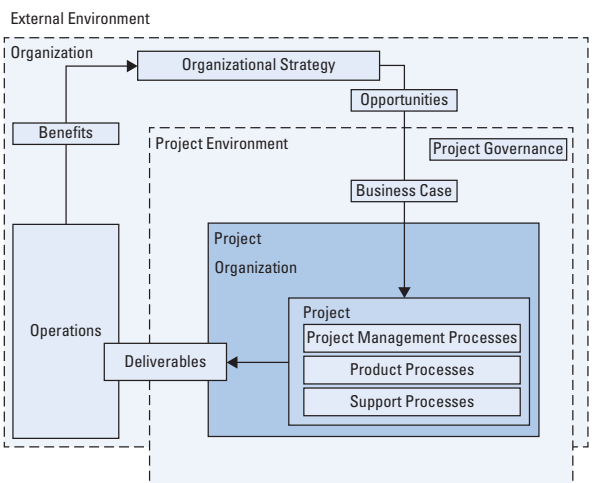

Figure 2.1 Project management concepts in organizations and other sponsor entities[7]

In fact these concepts are centered around *value creation* in an organization (e.g. an internal investment in a business or a (non-) governmental organization) or a sponsor entity (e.g. a railway owned by a governmental entity). The organizational or entity strategy creates opportunities which are evaluated and selected, for example in a *portfolio management* process. Business cases for selected opportunities may result in one of more projects with deliverables. These deliverables are normally used by operations to realize benefits and thus create value for the organization. The benefits can be input to realize and further develop the strategy. In commercial projects the benefits are realized without passing deliverables to operations.

Clause 4 identifies the recommended project management processes that should be applied to the whole project and/or to project phases. These processes are generic and can be used by any project in any organization or entity. Normally, the project manager and the sponsor select the applicable processes and the sequence in which they are dealt with, depending on the project at hand and the needs of the organization or entity.

The project management processes are viewed from two different perspectives: as *process groups* from the management perspective of a project, or as *subject groups* from the perspective of a specific theme (refer to the *knowledge areas* in PMI's *PMBOK Guide*) of the project management practice.

There are five *process groups*:

1 Initiating;
2 Planning;
3 Implementing;
4 Controlling;
5 Closing.

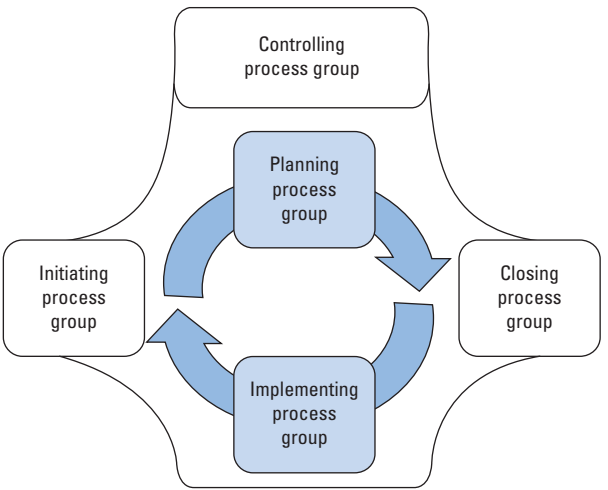

Figure 2.2 Process groups[7]

These process groups are based on the well known Deming Circle (Plan-Do-Check-Act) for continuous improvement.

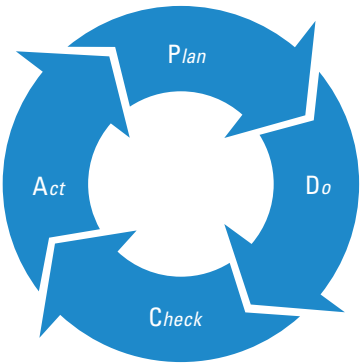

Figure 2.3 Deming Circle

There are 39 *processes*, divided into ten project management themes, called *subject groups*:

1 Integration;
2 Stakeholders;
3 Scope;
4 Resource;
5 Time;
6 Cost;
7 Risk;
8 Quality;
9 Procurement;
10 Communication.

The processes are summarized by process and subject groups in Table 2.1.

The table does not show the chronological order in which the processes are carried out.

Table 2.1 Overview of the project management processes[7]

Subject groups	Process groups				
	Initiating	Planning	Implementing	Controlling	Closing
Integration	4.3.2 Develop project charter	4.3.3 Develop project plans	4.3.4 Direct project work	4.3.5 Control project work 4.3.6 Control changes	4.3.7 Close project phase or project 4.3.8 Collect lessons learned
Stakeholder	4.3.9 Identify stakeholders		4.3.10 Manage stakeholders		
Scope		4.3.11 Define scope 4.3.12 Create work breakdown structure 4.3.13 Define activities		4.3.14 Control scope	
Resource	4.3.15 Establish project team	4.3.16 Estimate resources 4.3.17 Define project organization	4.3.18 Develop project team	4.3.19 Control resources 4.3.20 Manage project team	

Subject groups	Process groups				
	Initiating	Planning	Implementing	Controlling	Closing
Time		4.3.21 Sequence activities 4.3.22 Estimate activity durations 4.3.23 Develop schedule		4.3.24 Control schedule	
Cost		4.3.25 Estimate costs 4.3.26 Develop budget		4.3.27 Control costs	
Risk		4.3.28 Identify risks 4.3.29 Assess risks	4.3.30 Treat risks	4.3.31 Control risks	
Quality		4.3.32 Plan quality	4.3.33 Perform quality assurance	4.3.34 Perform quality control	
Procurement		4.3.35 Plan procurements	4.3.36 Select suppliers	4.3.37 Administer procurements	
Communication		4.3.38 Plan communications	4.3.39 Distribute information	4.3.40 Manage communications	

Within the processes all activities are performed that are relevant for managing a certain aspect in a project. All of the processes transfer inputs into useful outputs, which can, in turn, be inputs to other processes. Typical inputs/outputs here are project management documents, such as a project plan, a schedule, a contract, or a progress report. Only the most relevant inputs/outputs are listed in ISO 21500.

In **Annex A** of the original ISO 21500 an example of a possible logical sequence of the processes is included for a particular project.

2.6 The future of ISO 21500

ISO 21500 has been written as a guideline and because it does not contain requirements, it is in principle not meant for certification purposes. This differs from, for instance, the normative standard ISO 9001 'Quality management systems', which describes management systems for an organization to manage and improve its processes or a certain aspect of its operations. An organization can make the effort to become ISO 9001 certified to improve its quality and service to customers and clearly display its performance to the business environment.

As for every ISO standard and guideline, it is likely that ISO 21500:2012 will be updated in the next four to five years to integrate new developments and new best practices for project management. This next version could have a normative nature and then certification of organizations might be possible.

As an intermediate step towards organizational certification, a so called 'self-assessment' could be developed. To this extend, the developments which happened for the ISO 21600:2010 may

Figure 2.4 ISO 26000 Guidance on social responsibility

serve as an example. To support and promote the interest for ISO 26000:2010 – Guidance on social responsibility a 'Self-assessment ISO 26000' has been developed[8, 9, 10].

This self-assessment is not a certification but is a declaration of how an organization applies the principles and guidelines of ISO 26000. By publishing these self-assessments in a central database, organizations can prove that they operate sustainably and in a socially responsible way.

A similar self-assessment could be beneficial to organizations that run projects. Nowadays tenders for project work often prescribe that the supplier uses a specific project management method. One can foresee that in the near future project sponsors will require their suppliers to show that their project management practice conforms to ISO 21500.

Annex A of this pocket guide presents an example of what a 'ISO 21500 self-assessment' could look like. At the time of writing this book, there is an initiative in the Netherlands to develop such a self-assessment for the Dutch market.