
Guidance on project management

Lignes directrices sur le management de projet

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ISO 21500:2012

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 21500 was prepared by Project Committee ISO/PC 236, *Project management*.

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Introduction

This International Standard provides guidance on concepts and processes of project management that are important for, and have impact on, the performance of projects.

The target readership for this International Standard is the following:

- senior managers and project sponsors, in order to provide them with a better understanding of the principles and practice of project management and to help them give appropriate support and guidance to their project managers, project management teams and project teams;
- project managers, project management teams and project team members, so that they have a common basis upon which to compare their project standards and practices with those of others;
- developers of national or organizational standards, for use in developing project management standards, which are consistent at a core level with those of others.

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Guidance on project management

1 Scope

This International Standard provides guidance for project management and can be used by any type of organization, including public, private or community organizations, and for any type of project, irrespective of complexity, size or duration.

This International Standard provides high-level description of concepts and processes that are considered to form good practice in project management. Projects are placed in the context of programmes and project portfolios, however, this International Standard does not provide detailed guidance on the management of programmes and project portfolios. Topics pertaining to general management are addressed only within the context of project management.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1

activity

identified component of work within a schedule that is required to be undertaken to complete a project

2.2

application area

category of projects that generally have a common focus related to a product, customer or sector

2.3

baseline

reference basis for comparison against which project performance is monitored and controlled

2.4

change request

documentation that defines a proposed alteration to the project

2.5

configuration management

application of procedures to control, correlate and maintain documentation, specifications and physical attributes

2.6

control

comparison of actual performance with planned performance, analysing variances and taking appropriate corrective and preventive action as needed

2.7

corrective action

direction and activity for modifying the performance of work to bring performance in line with the plan

2.8

critical path

sequence of activities that determine the earliest possible completion date for the project or phase

2.9

lag

attribute applied to a logical relationship to delay the start or end of an activity

2.10

lead

attribute applied to a logical relationship to advance the start or end of an activity

2.11

preventive action

direction and activity for modifying the work, in order to avoid or reduce potential deviations in performance from the plan

2.12

project life cycle

defined set of phases from the start to the end of the project

2.13

risk register

record of identified risks, including results of analysis and planned responses

2.14

stakeholder

person, group or organization that has interests in, or can affect, be affected by, or perceive itself to be affected by, any aspect of the project

2.15

tender

document in the form of an offer or statement of bid to supply a product, service or result, usually in response to an invitation or request

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2.16

work breakdown structure dictionary (standards.iteh.ai)

document that describes each component in the work breakdown structure

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3 Project management concepts [1811411b9708/iso-21500-2012](https://standards.iteh.ai/catalog/standards/sist/68903726-1aae-4e68-84ea-1811411b9708/iso-21500-2012)

3.1 General

This clause describes key concepts applicable to most projects. It also describes environments in which projects are performed.

Figure 1 shows how project management concepts relate to each other. The organizational strategy identifies opportunities. The opportunities are evaluated and should be documented. Selected opportunities are further developed in a business case or other similar document, and can result in one or more projects that provide deliverables. Those deliverables can be used to realize benefits. The benefits can be an input to realizing and further developing the organizational strategy.

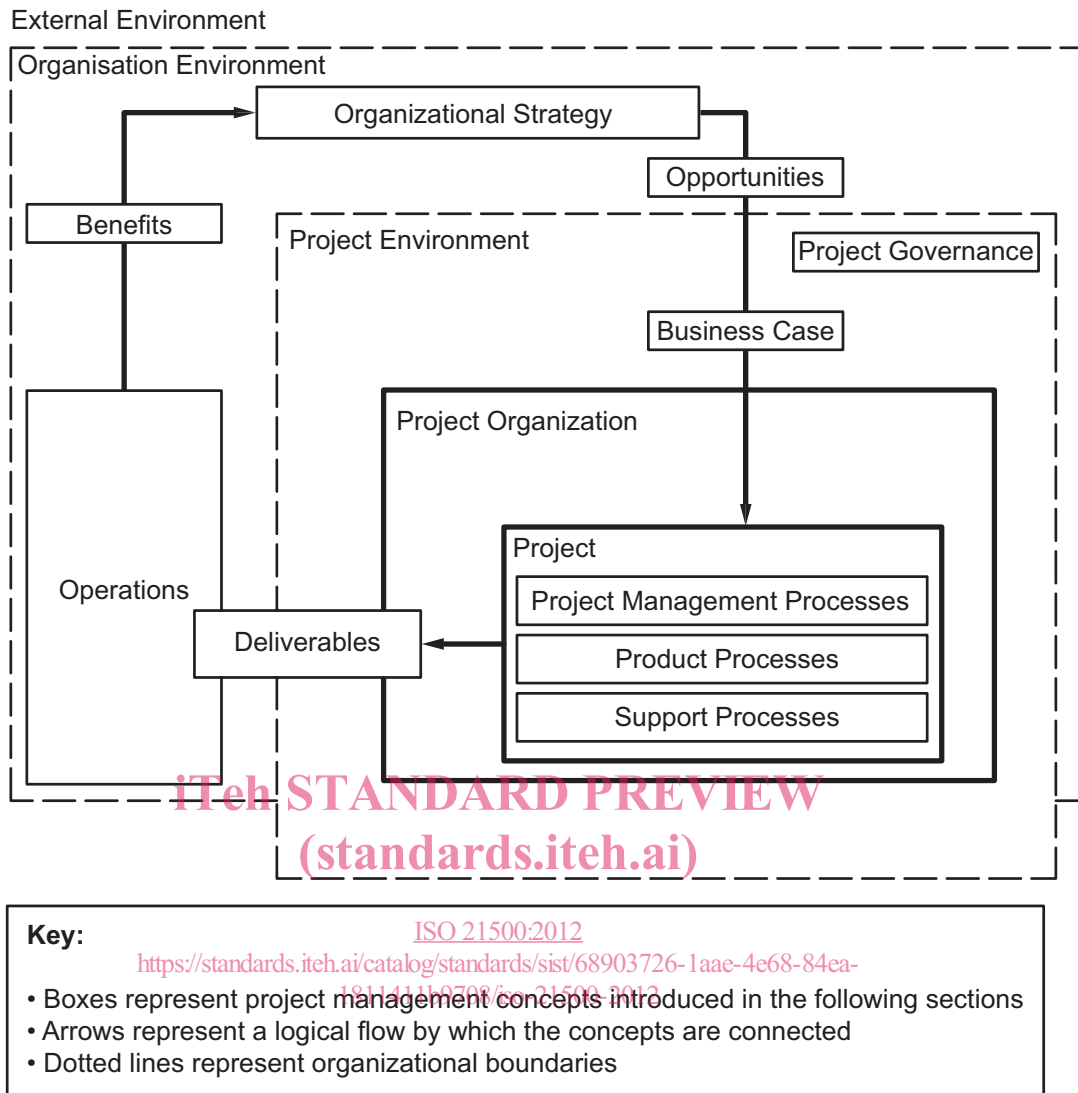


Figure 1 — Overview of project management concepts and their relationships

3.2 Project

A project consists of a unique set of processes consisting of coordinated and controlled activities with start and end dates, performed to achieve project objectives. Achievement of the project objectives requires the provision of deliverables conforming to specific requirements. A project may be subject to multiple constraints, as described in 3.11.

Although many projects may be similar, each project is unique. Project differences may occur in the following:

- deliverables provided;
- stakeholders influencing;
- resources used;
- constraints;
- the way processes are tailored to provide the deliverables.

Every project has a definite start and end, and is usually divided into phases, as described in 3.10. The project starts and ends as described in 4.3.1.

3.3 Project management

Project management is the application of methods, tools, techniques and competencies to a project. Project management includes the integration of the various phases of the project life cycle, as described in 3.10.

Project management is performed through processes. The processes selected for performing a project should be aligned in a systemic view. Each phase of the project life cycle should have specific deliverables. These deliverables should be regularly reviewed during the project to meet the requirements of the sponsor, customers and other stakeholders.

3.4 Organizational strategy and projects

3.4.1 Organizational strategy

Organizations generally establish strategy based on their mission, vision, policies and factors outside the organizational boundary. Projects are often the means to accomplish strategic goals. An example of a value creation framework is shown in Figure 2.

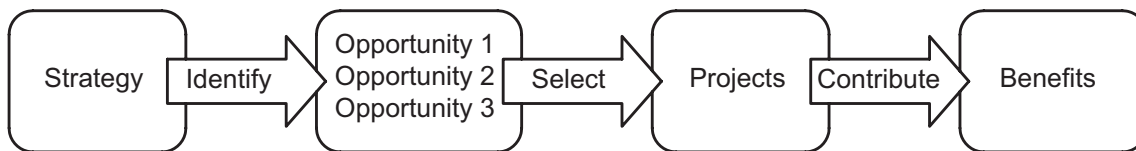


Figure 2 — Example of a value creation framework

Strategic goals may guide the identification and development of opportunities. Opportunities selection includes consideration of various factors, such as how benefits can be realized and risks can be managed.

The project goal is to provide measurable benefits that contribute to realizing the selected opportunities. The project objective contributes to the project goal by creating the required deliverables. Project goals are achieved when the benefits are realized. Goals might not be achieved until a period of time after the objectives are achieved.

3.4.2 Opportunity evaluation and project initiation

Opportunities may be evaluated to support informed decision-making by responsible management, in order to identify feasible projects that could transform some or all of these opportunities into realized benefits.

These opportunities may address, for example, a new market demand, a current organizational need or a new legal requirement. The opportunities are often evaluated through a set of activities that provide formal authorization to start a new project. The organization should identify a project sponsor to be responsible for project goals and benefits.

The goals and benefits may result in a justification for the investment in the project, e.g. in the form of a business case, and that may contribute to a prioritization of all opportunities. The purpose of the justification is usually to obtain organizational commitment and approval for investment in the selected projects.

The evaluation process may include multiple criteria, including financial investment appraisal techniques and qualitative criteria, such as strategic alignment, social impact and environmental impact. Criteria may differ from one project to another.

3.4.3 Benefits realization

Benefits realization is generally the responsibility of organizational management, which may use the deliverables of the project to realize benefits in alignment with the organizational strategy. The project manager should consider the benefits and their realization as they influence decision-making throughout the project life cycle.

3.5 Project environment

3.5.1 General

The project environment may impact project performance and success. The project team should consider the following:

- factors outside the organizational boundary, such as socio-economic, geographical, political, regulatory, technological and ecological;
- factors inside the organizational boundary, such as strategy, technology, project management maturity, resource availability, organizational culture and structure.

3.5.2 Factors outside the organizational boundary

Factors outside the organizational boundary may have an impact on the project by imposing constraints or introducing risks affecting the project. Although these factors are often beyond the control of the project manager, they should still be considered.

3.5.3 Factors inside the organizational boundary

3.5.3.1 General

A project usually exists inside a larger organization encompassing other activities. In such cases, there are relationships between the project and its environment, business planning and operations. Pre-project and post-project activities may include activities such as business case development, conducting feasibility studies and transition to operations. Projects may be organized within programmes and project portfolios. Figure 3 illustrates these relationships.

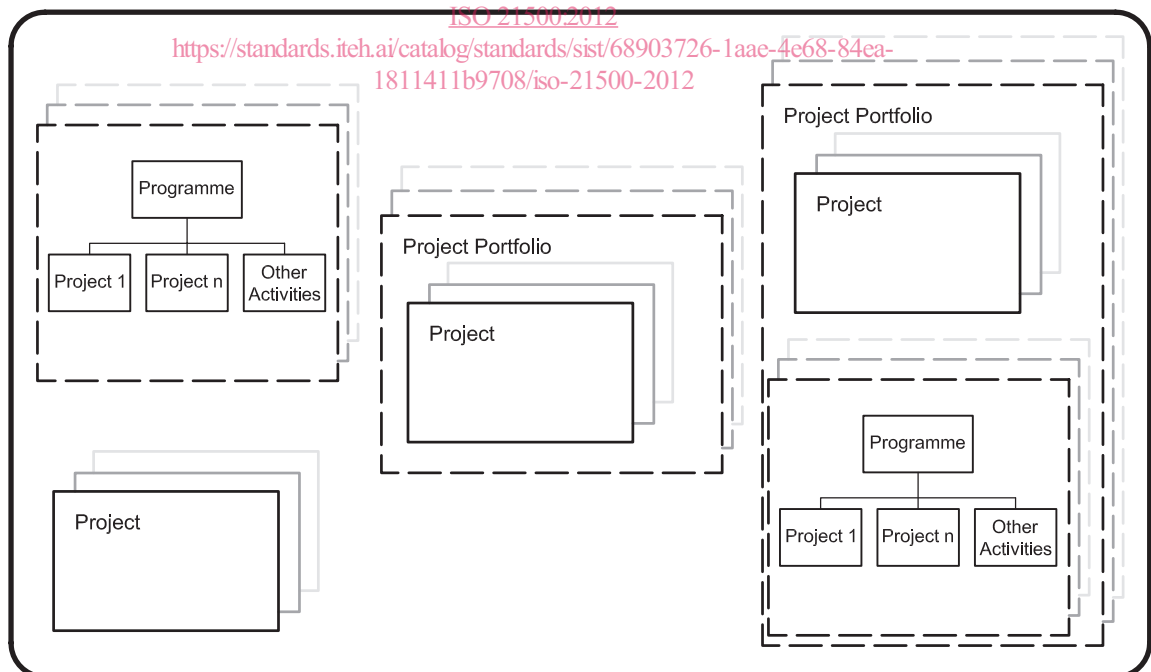


Figure 3 — Projects, programmes and project portfolios

3.5.3.2 Project portfolio management

A project portfolio is generally a collection of projects and programmes and other work that are grouped together to facilitate the effective management of that work to meet strategic goals. Project portfolio management is

generally the centralized management of one or more project portfolios, which includes identifying, prioritizing, authorizing, directing and controlling projects, programmes and other work to achieve specific strategic goals.

It may be appropriate to conduct the opportunity identification and selection, as well as the approval and management of projects, through a project portfolio management system.

3.5.3.3 Programme management

A programme is generally a group of related projects and other activities aligned with strategic goals. Programme management consists of centralized and coordinated activities to achieve the goals.

3.6 Project governance

Governance is the framework by which an organization is directed and controlled. Project governance includes, but is not limited to, those areas of organizational governance that are specifically related to project activities.

Project governance may include subjects such as the following:

- defining the management structure;
- the policies, processes and methodologies to be used;
- limits of authority for decision-making;
- stakeholder responsibilities and accountabilities;
- interactions such as reporting and the escalation of issues or risks.

The responsibility for maintaining the appropriate governance of a project is usually assigned either to the project sponsor or to a project steering committee.

3.7 Projects and operations

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Project management fits within the general framework of management. Project management differs from other management disciplines by the temporary and unique nature of projects.

Organizations perform work to achieve specific goals. Generally, this work may be categorized as either operations or projects. Operations and projects differ primarily as follows:

- operations are performed by relatively stable teams through ongoing and repetitive processes and are focused on sustaining the organization;
- projects are performed by temporary teams, are non-repetitive and provide unique deliverables.

3.8 Stakeholders and project organization

The project stakeholders, including the project organization, should be described in sufficient detail for the project to be successful. The roles and responsibilities of stakeholders should be defined and communicated based on the organization and project goals. Typical project stakeholders are shown in Figure 4.

Stakeholder interfaces should be managed within the project through the project management processes described in Clause 4.

The project organization is the temporary structure that includes project roles, responsibilities and levels of authority and boundaries that need to be defined and communicated to all stakeholders of the project. The project organization may be dependent on legal, commercial, interdepartmental or other arrangements that exist among project stakeholders.

The project organization may include the following roles and responsibilities:

- a) the project manager, who leads and manages project activities and is accountable for project completion;

- b) the project management team, which supports the project manager in leading and managing the project activities;
- c) the project team, which performs project activities.

Project governance may involve the following:

- the project sponsor, who authorizes the project, makes executive decisions and solves problems and conflicts beyond the project manager's authority;
- the project steering committee or board, which contributes to the project by providing senior level guidance to the project.

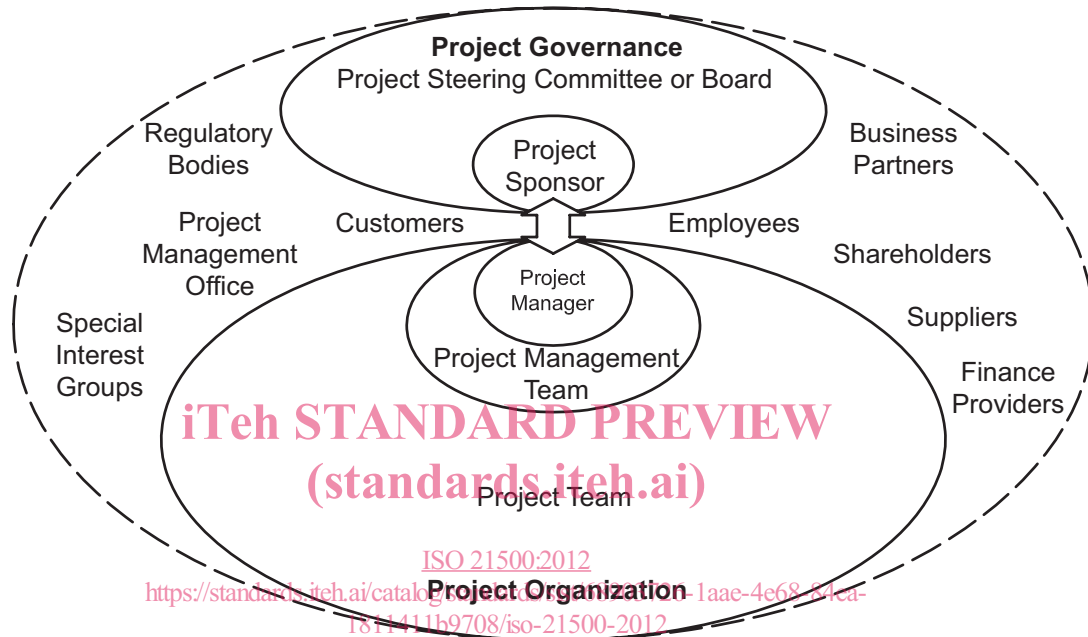


Figure 4 — Project stakeholders

Figure 4 includes the following additional stakeholders:

- customers or customer representatives, who contribute to the project by specifying project requirements and accepting the project deliverables;
- suppliers, who contribute to the project by supplying resources to the project;
- the project management office, which may perform a wide variety of activities including governance, standardization, project management training, project planning and project monitoring.

3.9 Competencies of project personnel

Project personnel should develop competencies in project management principles and processes in order to achieve project objectives and goals.

Each project team requires competent individuals who are capable of applying their knowledge and experience to provide the project deliverables. Any identified gap between the available and required competence levels represented on the project team could introduce risk and should be addressed.

Project management competencies can be categorized into, but are not limited to, the following:

- technical competencies, for delivering projects in a structured way, including the project management terminology, concepts and processes defined in this International Standard;