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Project, programme and portfolio management — Guidance on project management

Management de projets, programmes et portefeuilles — Recommandations sur le management de projets

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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This document was prepared by Technical Committee ISO/TC 258, *Project, programme and portfolio management*.

This first edition of ISO 21502, together with ISO 21500:—[1], cancels and replaces ISO 21500:2012, which has been technically revised. The main changes compared with ISO 21500:2012 are as follows:

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a) the concept of project management has been expanded to include project-related oversight and direction activities of the sponsoring organization;

b) information about how projects can deliver outcomes and enable the realization of benefits has been added;

c) consideration of the organizational context of projects has been added;

d) descriptions of additional project roles and responsibilities have been added;

e) new topics have been added, such as creating a project environment that is conducive to success, project life cycles, decision points and gates, and additional project practices, such as benefits management and change control, to reflect current practices in project management;

f) pre- and post-project activities have been added;

g) the format has been changed from process-based to practices and narrative-based (see Annex A for details).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

1) Under preparation. Stage at the time of publication: ISO/DIS 21500:2020.

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Introduction

This document provides guidance on concepts and practices for project management that are important for and have an impact on a project's successful delivery.

The target readership for this document includes, but is not limited to:

a) executive and senior management, to provide a better understanding of project management and to help them to give appropriate support and guidance to project managers and those individuals working on projects;

b) individuals involved in the governance, direction, assurance, audit and management of projects, such as project sponsors, project boards, auditors and project managers;

c) project managers and project team members, to have a common basis upon which to understand, conduct, compare, evaluate and communicate the practices used on their project;

d) developers of national or organizational project management standards, processes and methods.

In addition, this document can also be useful to individuals involved in supporting:

— the governance, direction and management of portfolios and programmes;

— project teams, programme and project offices or similar organizational structures;

— the academic study of project, programme and portfolio management;

— functions related to the management of projects, such as finance, accounting, human resource management, procurement and legal.

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Project, programme and portfolio management — Guidance on project management

1 Scope

This document gives guidelines for project management. It is applicable to any organization, including public, private and charitable, as well as to any type of project, regardless of purpose, delivery approaches, life cycle model used, complexity, size, cost or duration.

NOTE Delivery approach can be any method or process suited to the type of outputs, such as predictive, incremental, iterative, adaptive or hybrid, including agile approaches.

This document provides high-level descriptions of practices that are considered to work well and produce good results within the context of project management. This document does not provide guidance on the management of programmes or portfolios. Topics relating to general management are addressed only within the context of project management.

2 Normative references

There are no normative references in this document.

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3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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— ISO Online browsing platform: available at https://www.iso.org/obp
— IEC Electropedia: available at http://www.electropedia.org/

3.1
baseline
reference basis for comparison against which performance is monitored and controlled

[SOURCE: ISO/TR 21506:2018, 3.5]

3.2
benefit
created advantage, value or other positive effect

[SOURCE: ISO/TR 21506:2018, 3.6]

3.3
business case
documented justification to support decision making about the commitment to a *project* (3.20), *programme* (3.18) or *portfolio* (3.15)

[SOURCE: ISO/TR 21506:2018, 3.8]

3.4
change request
documentation that defines a proposed alteration to a *project* (3.20)

[SOURCE: ISO/TR 21506:2018, 3.10]

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3.5
configuration management
application of procedures to *control* (3.6), correlate and maintain documentation, specifications and physical attributes

[SOURCE: ISO/TR 21506:2018, 3.12]

3.6
control
comparison of actual performance with planned performance, analysing variances and taking appropriate corrective and *preventive action* (3.17) as needed

[SOURCE: ISO/TR 21506:2018, 3.13]

3.7
corrective action
direction and activity for modifying the performance of work to bring performance in line with a plan

[SOURCE: ISO/TR 21506:2018, 3.15]

3.8
critical path
sequence of activities that determine the earliest possible completion date for a *project* (3.20) or phase

[SOURCE: ISO/TR 21506:2018, 3.18]

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3.9
deliverable
unique and verifiable element that is required to be produced by a *project* (3.20)

[SOURCE: ISO/TR 21506:2018, 3.19, modified — The words "tangible or intangible outcome of a planned activity" have been replaced by "element that is required to be produced by a project".]

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3.10
governance
principles, policies and framework by which an organization is directed and controlled

[SOURCE: ISO/TR 21506:2018, 3.25]

3.11
issue
event that arises during a *project* (3.20) requiring resolution for the project to proceed

3.12
opportunity
risk occurrence that would have a favourable impact

[SOURCE: ISO/TR 21506:2018, 3.36]

3.13
outcome
change resulting from the use of the *output* (3.14) from a *project* (3.20)

3.14
output
aggregated tangible or intangible *deliverables* (3.9) that form the *project* (3.20) result

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3.15
portfolio
collection of *portfolio components* (3.16) grouped together to facilitate their management to meet strategic objectives

[SOURCE: ISO/TR 21506:2018, 3.42]

3.16
portfolio component
project (3.20), *programme* (3.18), *portfolio* (3.15) or other related work

[SOURCE: ISO/TR 21506:2018, 3.43]

3.17
preventive action
action to eliminate the cause of a potential nonconformity or other potential undesirable situation

Note 1 to entry: Preventive action is taken to prevent occurrence whereas *corrective action* (3.7) is taken to prevent recurrence.

[SOURCE: ISO 9000:2015, 3.12.1, modified — The original Note 1 to entry has been deleted.]

3.18
programme
group of *programme components* (3.19) managed in a coordinated way to realize *benefits* (3.2)

[SOURCE: ISO/TR 21506:2018, 3.50]

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3.19
programme component
project (3.20), *programme* (3.18) or other related work

[SOURCE: ISO/TR 21506:2018, 3.52]

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3.20
project
temporary endeavour to achieve one or more defined objectives

[SOURCE: ISO/TR 21506:2018, 3.59, modified — The words “created to produce agreed deliverables” have been replaced by “to achieve one or more defined objectives”.]

3.21
project assurance
planned and systematic actions necessary to provide confidence to the sponsoring organization and project *sponsor* (3.26) that a *project* (3.20) is likely to achieve its objectives

3.22
project governance
principles, policies and procedures by which a *project* (3.20) is authorized and directed to accomplish agreed objectives

[SOURCE: ISO/TR 21506:2018, 3.60]

3.23
project life cycle
defined set of phases from the start to the end of a *project* (3.20)

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3.24
project management
coordinated activities to direct and *control* (3.6) the accomplishment of agreed objectives

[SOURCE: ISO/TR 21506:2018, 3.61, modified — The word "deliverables" has been replaced by "objectives".]

3.25
project scope
authorized work to accomplish agreed objectives

[SOURCE: ISO/TR 21506:2018, 3.65, modified — The word "deliverables" has been replaced by "objectives".]

3.26
sponsor
person responsible for obtaining the resources and executive decisions to enable success

[SOURCE: ISO/TR 21506:2018, 3.78]

3.27
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 a *project* (3.20), *programme* (3.18) or *portfolio* (3.15)

[SOURCE: ISO/TR 21506:2018, 3.79]

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3.28
threat
risk occurrence that would have a negative impact

[SOURCE: ISO/TR 21506:2018, 3.83]

3.29
work breakdown structure
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decomposition of the defined scope of a *project* (3.20) or *programme* (3.18) into progressively lower levels consisting of elements of work

[SOURCE: ISO/TR 21506:2018, 3.87]

3.30
work package
group of activities that have a defined scope, *deliverable* (3.9), timescale and cost

4 Project management concepts

4.1 Overview

4.1.1 General

Clause 4 describes the concepts relating to project management which are drawn on when undertaking the practices described in Clauses 6 and 7. Figure 1 illustrates a context and environment within which a project can exist. A project can be stand-alone or part of a programme or portfolio (see 4.2.5), and can cross boundaries within an organization and between organizations. The organizational strategy should be used to identify, document and evaluate opportunities threats, weaknesses and strengths, which can help inform future action. Selected opportunities and threats can be further examined and justified in a business case. A business case can result in one or more projects being initiated. The outputs from projects are expected to deliver outcomes, which should realize benefits for the sponsoring organizations, as well as for internal or external stakeholders.

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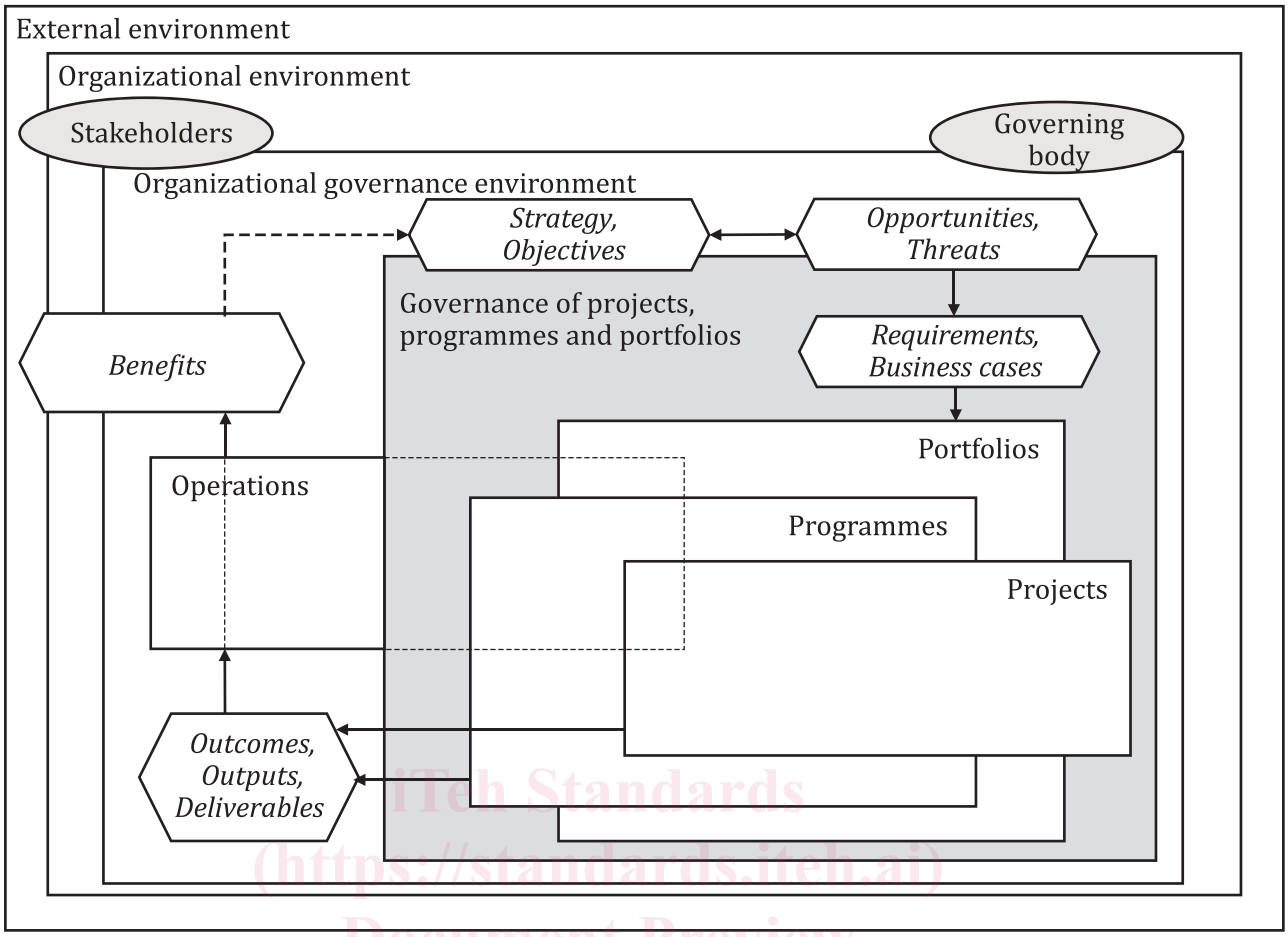

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NOTE The dashed lines of the operations box indicate that operations can stretch into projects, programmes and portfolios (the dashed lines can be referred to as "other related work").

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Figure 1 — An example of project management within the context of the governance and management of programmes and portfolios

4.1.2 Projects

Organizations undertake work to achieve specific objectives. Generally, this work can be categorized as either operations or projects. Operations and projects differ in that:

a) projects are temporary and focus on retaining or adding value or capability, for a sponsoring organization, stakeholder or customer;

b) operations are performed through ongoing activities and can be focused on sustaining the organization, such as through the delivery of repeatable products and services.

A project's objective can be fulfilled by a combination of deliverables, outputs, outcomes and benefits, depending on the project's context (see 4.2) and direction provided through governance (see 4.3). A project's objective should contribute to outcomes and realization of benefits for stakeholders, including the sponsoring organization, other internal and external organization stakeholders, customers and their stakeholders. Although many projects have similar features, each project is unique. Differences among projects can occur in factors such as, but not limited to:

— objectives;

— context;

— outcomes desired;

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— outputs provided;

— stakeholders impacted;

— resources used;

— complexity;

— constraints (see 4.2.4);

— processes or methods used.

4.1.3 Project management

Project management integrates the practices included in this document to direct, initiate, plan, monitor, control and close the project, manage the resources assigned to the project and motivate those individuals involved in the project to achieve the project's objectives. Project management should be performed through a set of processes and methods that should be designed as a system and should include practices necessary for a specific project as described in this document.

4.2 Context

4.2.1 Impact of a project's context

4.2.1.1 General

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The context of a project can impact a project's performance and likelihood of success. The project team should consider factors both within and outside the organization.

4.2.1.2 Factors within the organization

Factors within the organization, such as strategy, technology, general and project management maturity, resource availability, and organizational culture and structure, can have an impact on a project's success. A relationship exists between a project and its context that should be considered when tailoring the project management approach, developing the business case, conducting feasibility studies and designing for the transition to operations and customers, where applicable.

4.2.1.3 Factors outside the organization

Factors outside the organization can include, but are not limited to, socio-economic, geographical, political, regulatory, technological and ecological factors. These factors can have an impact on the project by imposing requirements or constraints or by introducing risks that affect the project. Although these factors are often beyond the power or capability of the project sponsor or project manager to control or influence, these factors should still be considered and planned for when directing, justifying (see 4.3.2), initiating, planning, monitoring, controlling and closing the project.

4.2.2 Organizational strategy and projects

Organizations often establish their overall strategy based on their vision, mission, values, policies and factors internal and external to the organization. Projects can be a means to achieving strategic objectives. Potential outputs and outcomes should be considered when identifying organizational opportunities and threats. The creation of value from undertaking projects is illustrated in Figure 2. Positive value is created when the benefits enabled by the project exceed the investment of resources. The created value can be tangible or intangible.

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