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Project, programme and portfolio management — Guidance on programme management

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

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Foreword

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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).

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

Introduction

This document provides guidance on concepts, prerequisites and practices of programme management that is important for, and has an impact on, the performance of programmes.

This document is intended for use by

— executive and senior management and those individua ls involved in the sponsorship of programmes,

— individuals managing and participating in programmes,

— developers of national or organizational standards, and

— developers of programme management methods and processes.

This document can be tailored to meet the needs of any organization or individual, so that they can better apply concepts, prerequisites and practices of programme management.

Project, programme and portfolio management — Guidance on programme management

1 Scope

This document provides guidance on programme management. This document is applicable to any type of organization including public or private and any size or sector, as well as any type of programme in terms of complexity.

This document provides high-level descriptions of relevant terms, definitions, concepts, prerequisites and practices, including roles and responsibilities that form good practice in programme management. It does not provide guidance on processes, methods and tools.

2 Normative references

There are no normative references in this document.

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 address:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
programme
temporary structure of interrelated *programme components* (3.3) managed together that provides advantages, contributes to the achievement of strategic and operational objectives, and realizes benefits

3.2
programme management
coordinated activities to direct the interrelated *programme components* (3.3) to achieve programme objectives and to realize benefits

3.3
programme component
project, *programme* (3.1) or other related work

3.4
programme benefit
assessable outcome by managing interrelated *programme components* (3.3) together to achieve strategic and operational objectives

4 Concepts of programmes and programme management

4.1 General

This clause describes the concepts of programmes and programme management. It provides guidance to executive and senior management on how programme management should be integrated in an organization or organizations.

4.2 Concepts of programmes

4.2.1 General

This clause describes the characteristics of programmes together with their purpose, establishment, alignment, structure and stakeholders.

4.2.2 Programme characteristics

Programmes may be strategic, transformational or operational and have one or more of the following characteristics:

— programmes are comprised of programme components that have interdependent and interrelated relationships to one another;

— programmes provide benefits to stakeholders and contribute to strategic or operational objectives;

— programmes inherently have complexity and uncertainty, which needs to be managed and reduced where possible.

Programme complexity and uncertainty may include, but are not limited to, the following:

— unclear and uncertain objectives to be achieved;

— context and other external factors;

— social, political, economic, sustainability and legal dynamics;

— technological aspects;

— constraints, such as time, cost, quality;

— interdependencies and integration among programme components;

— logistical issues;

— diverse stakeholder viewpoints and expectations.

4.2.3 Programme purpose

The programme's purpose should be to realize benefits, which are aligned to strategic and operational objectives, that may not be realized when components are managed individually. The programme may also improve efficiency, reduce threats and realize opportunities.

4.2.4 Programme establishment

When establishing a programme in an organization, the activities that should be considered, but are not limited to, are the following:

— developing a common approach to be used across multiple programme components;

— managing stakeholders' views and interests;

— communicating internal and external aspects of the programme;

— improving benefits realization, particularly in scheduling the early delivery of benefits;

— optimising the use of resources across programme components;

— optimising cost, schedule and quality;

— managing programme risks;

— steering and aligning the programme components;

— supporting a business rationale, which defines the objectives of the programme;

— identifying benefits to be realized by managing the individual components as a programme;

— aligning with one or more of the strategic and operational objectives.

When establishing a programme in an organization, risk and uncertainty can be of concern. The considerations that may be addressed, but are not limited to, are the following:

— level of complexity associated with the achievement of programme objectives;

— level of risk and uncertainty associated with the achievement of programme objectives and potential changes;

— degree of organizational change required;

— level of risk and uncertainty regarding required resources;

— level of complexity associated with spanning one or more geographical regions.

4.2.5 Programme alignment

Programmes may be established in a single organization, across multiple organizations, or within a project and programme portfolio. Programmes should be aligned to the governance framework for the benefits realization to other components, organizations, or other operational functions. An example of programme alignment is shown in Figure 1.
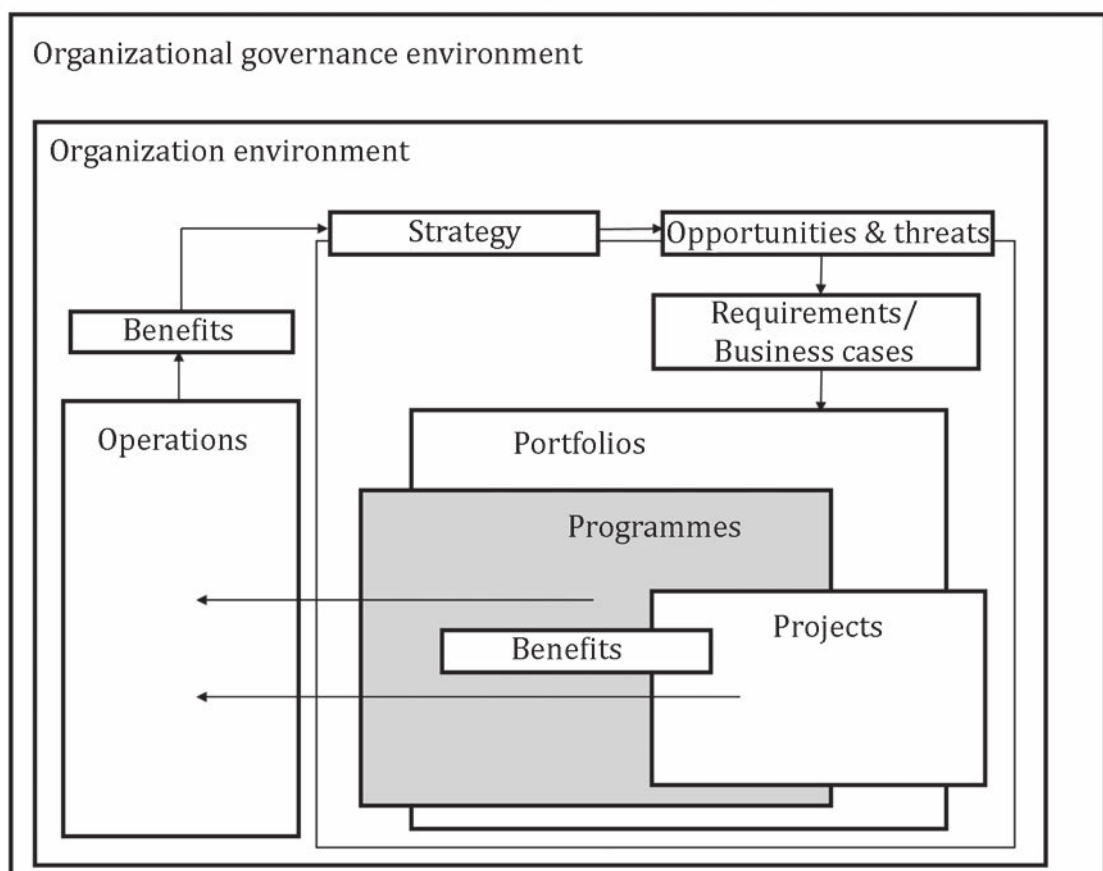
Figure 1 — Example of programme alignment within an organization

4.2.6 Programme structure

A programme should consist of at least two programme components. The programme structure should be designed to reflect aspects, such as outcomes and outputs required, the nature and complexity of the work, types of components needed and characteristics of the organization performing the programme.

Figure 2 shows an example of a programme structure including programme components such as projects, a programme and other related work.

NOTE   Other related work can include activities performed by functional and operation areas that support the programme and its components.
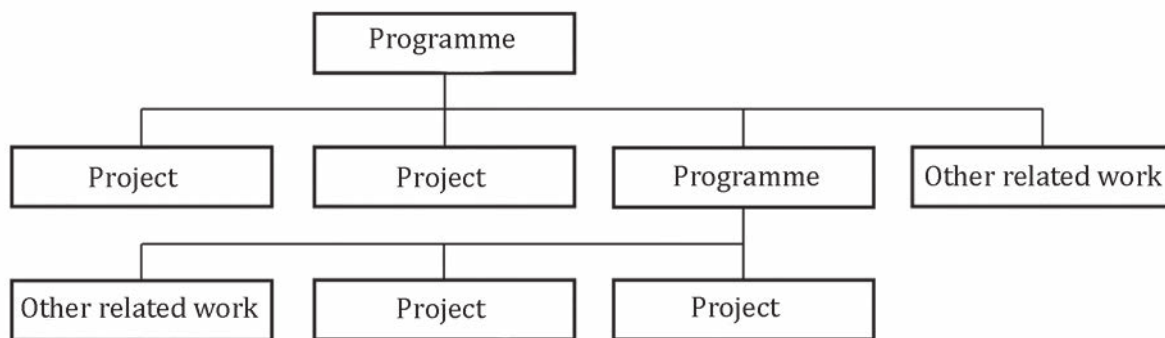
Figure 2 — Example of a programme structure

4.2.7 Programme stakeholders

Programme stakeholders may

— be affected by the programme, its outcomes or its objectives,

— affect the programme, its outcomes, or its objectives, or

— have expectations of the programme, its outcomes, or its objectives.

Programme stakeholders may include, but are not limited to, the following:

— sponsors;

— business owners;

— programme team;

— internal and external partners and organizations;

— core functional teams;

— support teams;

— programme management office;

— users.

4.3 Concepts of programme management

4.3.1 General

This clause describes programme management, its purpose and lifecycle.

4.3.2   Programme management

Programme management should provide a consistent approach and may include, but is not limited to, the following:

— establishing the programme organization;

— developing and implementing the programme management plan;

— steering and aligning programme components;

— managing the programme to achieve objectives and realize benefits;

— managing stakeholders' engagement;

— managing programme risks and issues;

— managing the integration of the performance of programme components;

— managing communication;

— managing scope, cost, schedule, resources, and quality;

— managing resources across programme components.

Programme management may enable the realization of two types of benefits:

— internal programme benefits that are generated by managing the programme components, as an integrated set of activities;

— external programme benefits that contribute to achieving strategic or operational objectives.

Benefits, tangible or intangible, may be realized both during the programme lifecycle and after programme closure. The programme should be organized and planned to realize benefits as early as possible.

4.3.3   Programme management purpose

The purpose of programme management should provide a consistent approach to the following:

— embracing complexity and uncertainty in the context of the programme;

— enabling the investment in programme components;

— aligning with the organizational strategy and risk tolerance;

— optimising the organizational capability and capacity;

— securing benefits from investment;

— identifying and managing stakeholders' interests.

4.3.4   Programme lifecycle

The programme lifecycle should start from the time a decision is made to initiate a programme or an agreed start date for the programme. The programme lifecycle should end when a decision is made to end the programme or an end date for programme closure is formally agreed.

A programme may be ended due to, but not limited to, any of the following reasons:

— achieving programme benefits has been completed;

— coordinating interrelated components is no longer needed;

— achieving benefits is no longer possible or necessary.

A programme lifecycle should consist of stages in order to organize, manage and integrate the programme components that enable the realization of benefits. During the lifecycle of the programme, several of its components may start and end.

5 Prerequisites for programme management

5.1 General

This clause provides guidance to executive and senior management on prerequisites that should be considered before the implementation of programme management and its sustainment.

5.2 Evaluating the need for programme management

When deciding whether to implement programme management within an organization the ability to integrate other related work, and the capacity to absorb change should be considered. To evaluate the need for programme management, the factors that may be considered, but are not limited to, are the following:

— impact on governance within the organization;

— alignment with strategic and operational objectives;

— organizational structure, maturity and culture;

— ability to work across and within organizational boundaries;

— impact of organizational change, both internally and externally;

— availability of human resources, their knowledge, skills and abilities;

— budget impacts;

— effort required for implementation.

Justification at the organizational level should address the need, risks, benefits, resources required, and how the proposed implementation of programme management aligns to one or more of the strategic and operational objectives. The implementation of programme management may be evaluated in terms of the following:

— stakeholder engagement and management;

— balanced stakeholder views and interests;

— internal and external communication;

— use of resources;

— organizational efficiencies;

— budget, schedule and quality;

— skills required;

— risk visibility and management;

— management of complexity;

— programme alignment, control and reporting of the programme components and associated elements;

— realization of benefits.

The justification for the implementation of programme management within an organization should be written in a business case or other similar documented analysis.

5.3 Implementing programme management in organizations

When planning to implement programme management, executive and senior management may address the following:

— managing the need for the alignment of programmes to organizational strategy;

— investment in financial and additional resources;

— need to negotiate, invest in, and balance resources throughout the organization;

— management effort required to monitor and control the programme and its intended benefits;

— demand for coordination and communication both internally and externally to support the programme;

— need for change and complexity management;

— conflicts in project and programme management integration;

— conflicting priorities between organizational and operational functions;

— organizational challenges in relation to culture, skills and geographic location.

5.4 Aligning programme management

Alignment of programme management should consider organizational governance. This alignment should have a strategic rationale and relationship. Strategic alignment of programme management should achieve synergistic outcomes within the organization or across the participating organizations.

At the organizational level, systems, procedures and processes should already be aligned. The organization should define how and which resources will be allocated to the management and control of programmes and their components so that opportunities for efficiencies and alignment may occur.

Programme management should align with the governing organization or portfolio. The alignment should improve the management and delivery of programmes, and their individual components to realize additional benefits.

Sustainability of programmes and their components within an organization may be carefully aligned by balancing and optimizing social, economic and environmental characteristics. The relationship allows the executive and senior management to have oversight of programme management; enables strategic alignment; and the selection of programme components.

5.5 Establishing programme roles and responsibilities

5.5.1 General

Executive and senior management should assign and define the programme management roles, responsibilities, accountability and limits of authority. These roles should be defined to

— assist with providing the required resources, capabilities, processes and tools, and

— support and enable organizational change and the realization of programme benefits.

The key roles and responsibilities should include, but are not limited to, the programme sponsor (5.5.2), programme manager (5.5.3) and programme management team (5.5.4).

5.5.2 Programme sponsor

The programme sponsor should be responsible for the overall programme strategy and advocacy of the programme, including, but not limited to, the following:

— aligning the programme with organizational strategy;

— aligning the programme with the business case, as appropriate;

— communicating the objectives of the programme;

— delegating authorities to the programme manager:

— making decisions that impact the programme;

— supporting an interface with executive management or other organizational management structures;

— supporting customers´ and stakeholders´ engagement;

— resolving issues and conflicts beyond the programme manager's authority;

— approving or facilitating changes to the programme.

5.5.3 Programme manager

The programme manager should be responsible for the overall performance of the programme and coordinating the programme components including, but not limited to, the following:

— acting on direction from the programme sponsor;

— leading and resourcing the programme and the programme management team;

— making decisions and directing the programme management team;

— achieving programme objectives and realizing programme benefits;

— resolving problems and conflicts within the programme;

— providing an interface to organizational management;

— providing an interface with stakeholders;

— monitoring and advising the sponsor on the alignment and progress of the programme;

— working with the sponsor and organizational management to support programme needs;

— controlling the interrelationship between programme components.

5.5.4 Programme management team

The programme management team should be responsible for the performance and implementation of one or more programme components or functions.

The programme management team may consist of the following:

— programme sponsor;

— programme manager;

— change manager, when appropriate;

— programme component managers;

— administrative support;

— other technical functions required by the programme.

The programme team may be supported with reporting, training, consulting, contract management, performance management, assurance, audit and other functions as required. Individuals on the programme management team may have specific or additional roles and responsibilities as part of a programme. Programme component team members may be considered part of the broader programme management team.

6 Managing a programme

6.1 General

This clause describes the practices for establishment, integration, practices, control, benefits management and closure of a programme.

6.2 Establishing a programme

6.2.1 General

Establishing a programme should include a framework for programme management, consistent with the management context, and a programme design and plan.

6.2.2 Framework for programme management

The framework for programme management should enhance the performance of the programme including identification and realization of benefits. The development of the framework may consider, but is not limited to, the following:

— establishing responsibility and accountability for programme planning, implementation, control;

— facilitating supporting roles and providing necessary resources.

6.2.3 Programme design and planning

Programme design and planning activities may include, but are not limited to, the following:

— identifying programme vision and objectives;

— identifying stakeholder needs and expectations;

— identifying a strategy and activities associated with change;

— developing a strategy for stakeholder management;

— identifying the possible programme components;

— identifying interdependencies between programme components;

— developing the programme roadmap, priorities and integrated schedule;

— identifying the resources required for the programme;

— identifying and securing funds;

— planning for benefits realization;

— identifying the programme reporting structure;

— identifying roles and responsibilities.

6.3 Programme integration

6.3.1 General

Programme integration may include the integration of strategy, requirements, components, and functions. Programme integration may also include taking advantage of the synergy created by managing components together.

6.3.2 Strategic integration

By balancing the programme deliverables against organizational strategy and objectives, the organization should be able to improve sustainability, benefits realization, and transition of deliverables and outcomes.

6.3.3 Requirements integration

Requirements integration should support, but may not be limited to, the following:

— mapping of programme benefits to stakeholder expectations;

— aligning requirements of the programme and its components;

— coordinating requirements among the programme components.

6.3.4 Component integration

Integration of programme components should consider interdependencies, which may include, but are not limited to, the following:

— similar or interrelated programme components;

— awareness and control of the larger investment;

— efficiencies in shared resources;

— programme-level approach to threats and opportunities;

— cost reductions through shared activities;

— environmental controls and impact;

— management and control of programme components.

Programme component integration should be established and may include, but is not limited to, the following:

— oversight of the interactions among programme components;

— compatibility of component processes and systems;

— coordination of outputs to meet objectives;

— integration of the inputs and outputs of programme components;

— integration of the outcomes to enable the realization of programme benefits.

6.3.5 Functional integration

Functional integration may require, but is not limited to, the alignment of engineering, legal, finance, operations, information technology, human resources, programme processes, systems, and change activities which should be performed to realize expected benefits and achieve programme objectives.

6.4 Programme management practices

6.4.1 General

A common application of practices across programme components should be applied to enable programme integration, control and management. A programme may require the component managers to select and implement specific programme practices and systems. Also, there are practices that are unique in their application within the programme to enable integration control and oversight. The programme practices described in 6.4.2 to 6.4.8 may be used throughout the programme lifecycle.

6.4.2 Risk and issue management

A risk and issue management approach should be used to capture relevant issues, threats and opportunities, which may include, but are not limited to, the following:

— using a consistent risk management practice for both component and programme level risks that integrates with the organizational risk plan;

— aligning the organizational and programme risk tolerance;

— performing on-going identification, documentation and escalation of programme issues, threats, and opportunities throughout the programme lifecycle;

— accumulating component issues, threats, and opportunities that may impact the programme;

— analysing programme issues, threats, and opportunities;

— developing and deploying response plans for programme issues, threats, and opportunities;

— monitoring and ownership assignment.

6.4.3 Change management

Change management should address changes that may affect the programme or realization of benefits. Programme change management may include, but is not limited to, the following:

— establishing a programme change board structure;

— implementing an approval process for the programme;

— establishing a change control process aligned with the programme baselines;

— analysing, tracking and assessing the impact of changes across programme components;

— implementing approved changes.

6.4.4 Quality management

Quality management within programme management may include, but is not limited to, the following:

— identifying and communicating relevant standards;

— applying quality assurance;

— performing quality control measures as planned;

— deploying usable metrics that provide qualitative measures.

6.4.5 Resource management

Programme resource management optimizes the utilization of resources. Resources may include, but are not limited to, human resources, funds, equipment, real estate, facilities and tools. Programme management should monitor and facilitate the utilization of resources across the programme components.

6.4.6 Schedule management

The programme schedule should include the integration of component schedules. The programme schedule should incorporate the timing for programme component deliveries and benefits realization. Schedule management should include the monitoring of component schedules to allow mitigation of component impact on the integrated programme schedule.

6.4.7 Budget and financial management

The programme budget integrates component cost estimates and budgets that result in the development of the programme budget and funding plan. The programme budget and financial management may include, but are not limited to, the following:

— securing funding;

— allocating budget to programme components;

— monitoring component budget utilization to allow mitigation of component impact on the programme budget;

— applying organizational policies for management reserve and contingency;

— determining and utilizing management reserve and contingency funds;

— analysing and verifying financial performance.

6.4.8 Stakeholder and communication management

Programme stakeholder management should be coordinated with the programme components to identify relevant stakeholder interests, needs, expectations and perspectives. Programme stakeholder management may differ from programme component stakeholder management in communication style, media, frequency and information communicated, while reducing duplication.

Programme reporting should enable stakeholders to continuously monitor activities such as, but not limited to, the following:

— programme and programme component progress;

— issues, threats, and opportunities;

— programme component deliverables;

— progress towards benefits realization.

6.5 Programme control

Programme control should include, but is not limited to, the following:

— managing the impact of programme decisions across programme components;

— maintaining and adjusting component boundaries and interfaces and taking advantage of component synergies;

— changing component priorities as required;

— understanding the interrelationships and potential impacts on the programme baselines and the component baselines;

— confirming the realization of benefits within the programme lifecycle;

— monitoring overall budget and variation by programme component.

6.6 Benefit management

6.6.1 General

This clause describes the benefit identification, analysis and control.

6.6.2 Benefit identification and analysis

Benefit identification and analysis should begin when the programme is being considered. After the programme has been established, a more detailed set of benefits to be realized should be identified, analysed and prioritized. Benefit identification and analysis may include, but are not limited to, the following:

— identifying expected benefits;

— identifying benefit owners for each benefit to be realized;

— aligning benefits with strategic and other objectives;

— defining performance metrics and reporting for each benefit;

— determining time frames for benefits realization.

6.6.3 Benefit control

The control of benefits may include, but is not limited to, the following:

— measuring and controlling progress towards the realization of expected benefits throughout the programme lifecycle;

— collecting performance measurements for each benefit;

— reporting and communicating the status of benefits to the stakeholders;

— identifying additional benefits throughout the programme lifecycle.

Benefits may be realized during the programme, at the end of the programme, or after the programme has closed. Before the end of the programme, the responsibility for the future realization of benefits may be transferred to a new owner.

6.7 Programme closure

Programme closure should include, but is not limited to, the following:

— verifying acceptance of programme component deliverables;

— verifying programme benefits have been realized or transferred;

— closing or transferring programme components;

— completing the final report of the programme;

— capturing, documenting, communicating, and archiving lessons learned;

— releasing the programme resources;

— closing contracts and financial accounts;

— archiving programme records.

Bibliography

[1]   ISO 21500, *Guidance on project management*

[2]   ISO 21504, *Project, programme and portfolio management — Guidance on portfolio management*

[3]   ISO 21505, *Project, programme and portfolio management — Guidance on governance*

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