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Project, programme and portfolio management — Guidance on portfolio management

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

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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).

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).

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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.

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

This second edition cancels and replaces the first edition (ISO 21504:2015), which has been technically revised. The main changes are as follows:

— terms and definitions, figures and the text have been aligned with ISO 21500:2021 and ISO 21502:2020.

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.

Introduction

This document provides guidance on the principles of project and programme portfolio management. Typically, management of a project and programme portfolio supports the organizational strategies to deliver value.

This document is intended to be used by:

a) executives and senior managers responsible for setting and implementing organizational strategy and business planning;

b) decision-makers responsible for selecting, authorizing and governing projects, programmes and portfolios;

c) teams and individuals responsible for implementing and managing the project and programme portfolios;

d) project and programme managers and other stakeholders.

Project, programme and portfolio management — Guidance on portfolio management

1 Scope

This document gives guidance on the principles of project and programme portfolio management. This document is relevant to any type of organization including public or private and any size organization or sector.

The guidance presented in this document is intended to be adapted to suit the specific environment of each project and programme portfolio.

This document does not provide guidance on project management, programme management, or other specific types of portfolio management (such as financial portfolio management).

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 addresses:

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

— IEC Electropedia: available at https://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
governance
principles, policies and framework by which an organization is directed and controlled

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

3.4
governing body
person, group or entity accountable for the *governance* (3.3) of an organization, organizations or a part of an organization

[SOURCE: ISO/TR 21506:2018, 3.26]

3.5
outcome
change resulting from the use of the output from a *project* (3.12) or *programme* (3.10)

[SOURCE: ISO 21502:2020, 3.13, modified — “or programme” have been added.]

3.6
portfolio
collection of *portfolio components* (3.7) grouped together to facilitate their management to meet strategic objectives

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

3.7
portfolio component
project (3.12), *programme* (3.10), *portfolio* (3.6), or other related work

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

3.8
portfolio manager
person appointed with the accountability and responsibility for a *portfolio* (3.6) to meet strategic objectives

[SOURCE: ISO/TR 21506:2018, 3.46]

3.9
portfolio management
coordinated activities to direct and control the accomplishment of strategic objectives

[SOURCE: ISO/TR 21506:2018, 3.45]

3.10
programme
group of programme components managed in a coordinated way to realize *benefits* (3.2)

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

3.11
programme management
coordinated activities to direct and control the realisation of identified *benefits* (3.2) and deliverables

[SOURCE: ISO/TR 21506:2018, 3.54]

3.12
project
temporary endeavour to achieve one or more defined objectives

[SOURCE: ISO 21502:2020, 3.20]

3.13
project management
coordinated activities to direct and control the accomplishment of agreed objectives

[SOURCE: ISO 21502:2020, 3.24]

3.14
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 a *project* (3.12), *programme* (3.13) or *portfolio* (3.6)

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

3.15
strategic alignment
result of selecting and adjusting *portfolio components* (3.7) to contribute to accomplishing the strategic objectives of an organization

4 Principles of portfolio management

4.1 Context and need for portfolio management

The strategic objectives of the organization, as well as other organizational considerations such as market or financial circumstances, guide the decision to implement portfolio management. The decision by the organization to adopt portfolio management depends on its context and on considerations, such as:

a) the impact of introducing portfolio management into the organization, including the capability of the organization to absorb changes in terms of structure, responsibilities and culture;

b) the threats and opportunities associated with the implementation of portfolio management.

Figure 1 illustrates the context and environment within which portfolio management can operate. 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 business cases, which can result in one or more portfolio components being initiated. The outcomes, outputs and deliverables from the portfolio components are expected to realize benefits for the sponsoring organization, as well as for external stakeholders.

Portfolio management enables a consistent approach for managing the components of the portfolio, in order to:

— enable investment in portfolio components aligned with the organizational strategy;

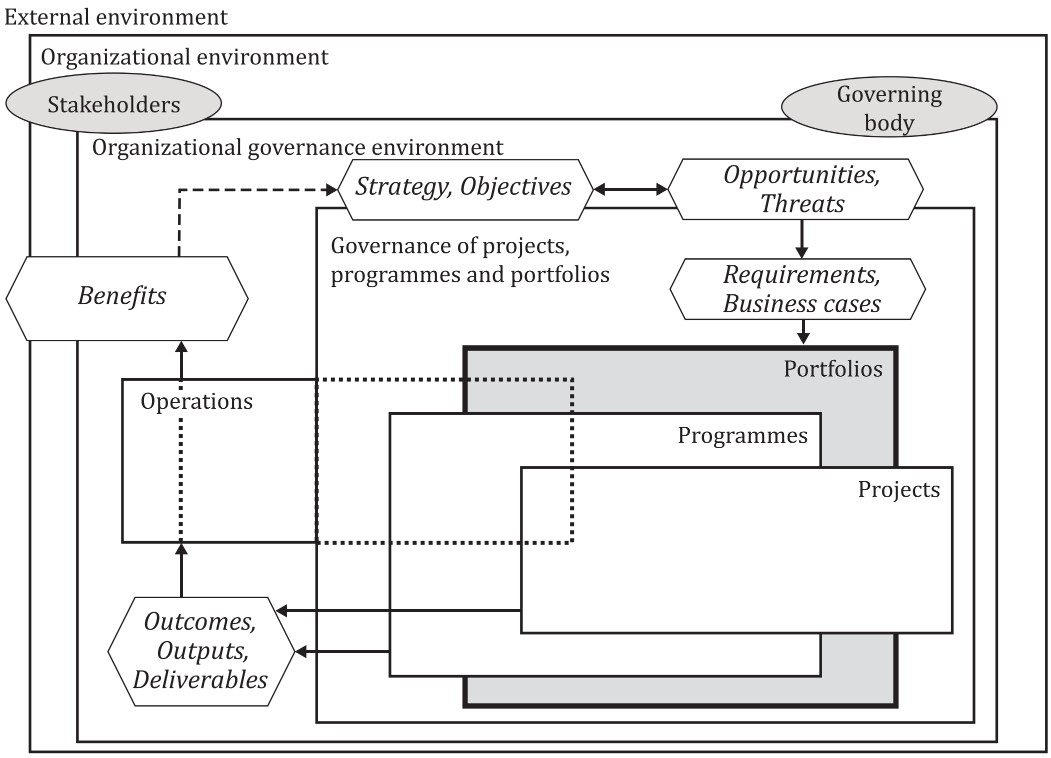
— optimize organizational capability and capacity;

— maximize benefits from investment;

— identify and manage stakeholders’ expectations;

— provide visibility of portfolio component activity and status.

The guidance in this document can be applied in any organizational environment. In addition, for portfolio management to maximize benefits aligned to the strategy of the organization, there are prerequisites that should be in place to support portfolio management (see Clause 5).



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”).

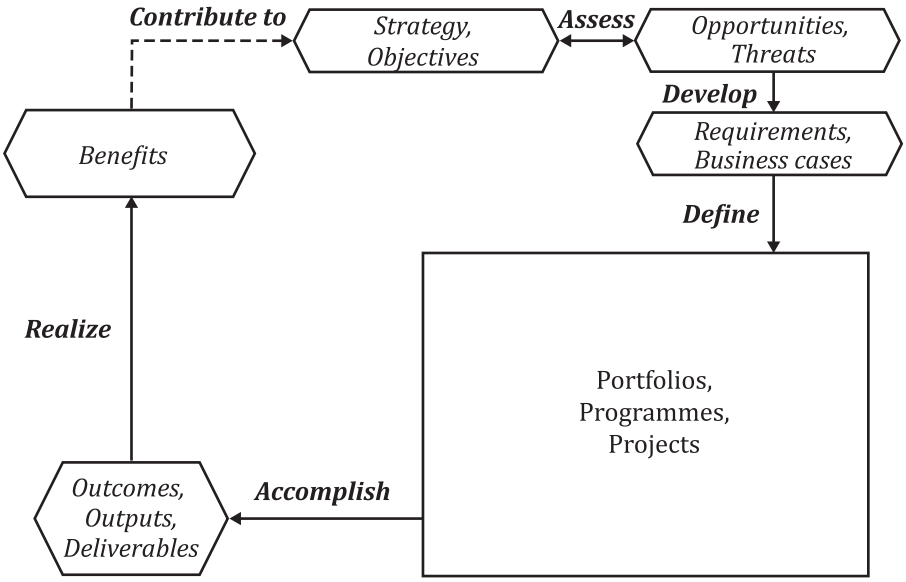
Figure 1 — An example of portfolio management within the context of the governance and management of projects and programmes

4.2 Overview of portfolio management

4.2.1 Portfolio management

Portfolio management should include a set of interrelated organizational processes and methods by which an organization allocates resources to achieve its strategic objectives.

Portfolio management aligns the portfolio component objectives with the strategic objectives of the organization, stakeholder priorities, and values such as sustainable practices and ethical principles. As shown in Figure 2, portfolio management can be described as a continuous decision-making process, whereby the list of portfolio components of an organization is subject to periodic review for alignment with the strategy of the organization. In this approach, new opportunities or threats are evaluated, selected, prioritized and authorized. Portfolio components may be modified, accelerated, postponed or terminated.



NOTE Opportunities and threats are seen from a strategic perspective.

Figure 2 — An example of strategy implementation

4.2.2 Portfolio structure

A portfolio should be structured as a hierarchy in which higher-level portfolio components are made up of lower-level portfolio components, as illustrated in Figure 3. There are other relationships not illustrated in Figure 3, such as resources, technology and communication. The structure of the portfolio represents a "snapshot" of portfolio components and is reflective of the strategic objectives of the organization to which it is aligned.

The structure within the portfolio should include a minimum of two portfolio components.

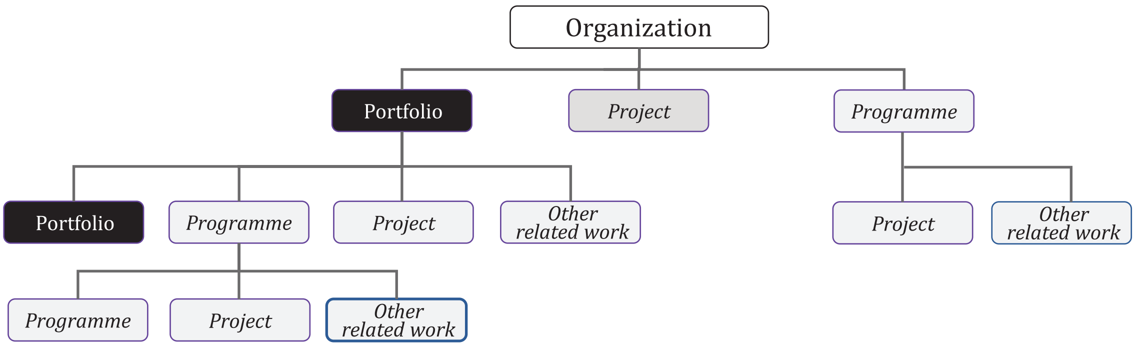


Figure 3 — An example of the relationship between projects, programmes and portfolios

4.2.3 Capabilities and constraints

Portfolio capability is the ability of the organization to apply resources to achieve strategic objectives.

Decision-makers should determine whether the work within the portfolio can be accomplished. An organization should provide and maintain the capabilities it needs to run the organization in its current state and to implement the necessary changes to move it towards its strategic objectives.

A portfolio constraint can prevent the portfolio from achieving the envisioned strategic objectives or cause the strategic objective to be modified or reprioritized. Constraints can originate from internal or external sources. The organization should have direct control over internal constraints, however, it is possible that the organization is only able to influence, comply with or react to external constraints. Constraints can include factors such as governance, resources, social responsibility, culture, risk tolerance, sustainability, and legal or regulatory requirements.

4.2.4 Opportunities and threats

Opportunities and threats can come from the strategy, customer requests, evolution of offerings, or internal improvements. In some cases, the identification of opportunities and threats can be part of portfolio management. The response to opportunities or threats can lead to one or more new portfolio components being initiated or can modify one or more of the existing portfolio components.

An organization should define the boundaries between strategy and portfolio management, so that it is clear how they influence each other. The strategic objectives should determine what opportunities and threats should be addressed and prioritized. Opportunities or threats can lead to the strategy being redefined.

4.3 Roles and responsibilities

4.3.1 General principles

Decision-makers should be assigned their authority, accountability and responsibility to take actions by the owners or legal entity controlling the organization. Such authority should be assigned for specific actions and decisions, and the authority should be limited to the portfolio and its components. Other roles and responsibilities should be defined together with the limits of any assigned authorities. Portfolio management requires competent individuals applying their knowledge and experience. Executives and senior management should demonstrate leadership and commitment with respect to portfolio management.

4.3.2 Defining decision rights for portfolio content

Roles, responsibilities, authorities and accountabilities should be assigned to enable consistent decision-making across the organization to support effective portfolio management. Decision rights should be defined for:

a) executives and senior managers responsible for setting and evaluating organizational strategy and business planning;

b) decision-makers who authorize changes to a portfolio;

c) managers who direct the day-to-day activities of the portfolio, within agreed limits;

d) stakeholders who support decision-making.

4.4 Stakeholder engagement and management

Stakeholder engagement and management should be performed. Stakeholders can include those involved in strategic and business planning, project and programme management, and project or programme offices. Other stakeholders should be identified through an agreed stakeholder identification and analysis process.

5 Prerequisites for portfolio management

5.1 Overview

This clause addresses the prerequisites that an organization should meet to set up and maintain portfolio management. Addressing these prerequisites should involve:

a) consideration of benefits for the organization;

b) assessment of positive or negative impact on the organization, both internally and externally;

c) set up and readiness for implementation.

5.2 Justification for portfolio management

Portfolio management requires an investment of resources. There should be a justification of this investment. This justification should address the need, the benefits and the cost of the investment, as well as the alignment to one or more strategic objectives. The degree of formality for presenting this justification can vary from organization to organization.

5.3 Portfolio management framework

The portfolio management framework should define the means by which the organization determines and decides which components should be prioritized and included in the portfolio or removed. The framework should also define how resources will be allocated to those components.

5.4 Types of portfolio components

The organization should determine the types of work to be included or excluded as portfolio components, as well as criteria that should be used to identify them. The type of work should include:

a) types of projects;

b) types of programmes;

c) other portfolios;

d) other related work.

5.5 Criteria for selecting and prioritizing portfolio components

Criteria for the selection and prioritization of portfolio components should be defined and verifiable. These criteria should reflect the objectives of the portfolio and align with the organizational strategy. The criteria should also reflect the values, principles, other organizational policies and targeted benefits.

The definition and documentation of such criteria should reflect that:

a) selected portfolio components support the organization in achieving its strategic objectives and realizing specific benefits;

b) the portfolio falls within the tolerated risk exposure of the organization as determined by a defined method;

c) a balanced portfolio is maintained (see 6.8);

d) a structured and consistent method is followed for evaluating and aligning the mix of portfolio components;

e) comparability exists among portfolio components of different types.

5.6 Alignment with organizational processes and systems

Portfolio management processes and systems should be aligned with the following organizational processes and systems:

a) organizational governance;

b) performance reporting processes and systems;

c) resource management processes and systems;

d) risk management processes and systems;

e) financial management processes and systems;

f) project and programme management processes and systems;

g) communication methods and cycles;

h) business planning and systems.

5.7 Visibility of the portfolio

A management system should be defined and established to provide visibility and relevant information to the decision-makers. The management system should provide status and overview of:

a) portfolio components;

b) resource management;

c) alignment with strategic objectives and other intended benefits;

d) benefits status and realization;

e) current risk exposure that the portfolio generates for the organization as a whole.

The management system should:

— enable portfolio reporting;

— align and coordinate with the existing processes and systems of the organization;

— provide visibility of selected and potential portfolio components.

5.8 Portfolio performance reporting structure

A performance reporting structure and method, with measurement criteria, should be defined and established to monitor achievement of the portfolio objectives and the strategic objectives of the organization. This structure should include reporting for the portfolio as a whole and for each component to:

a) enable decision-making and provide timely alerts of performance variances;

b) enable the organization to continuously improve strategic financial forecasting and benefits realization;

c) enable tracking of schedules, costs, contributions, benefits, risks and resourcing;

d) align the reporting cycle with the cycle of portfolio component development;

e) integrate the reporting cycle with the project or programme life cycle processes used by the organization;

f) enable reporting iterations of the portfolio and the progress towards realizing benefits;

g) report the level of risk exposure of the portfolio for the organization.

5.9 Improving portfolio management

The organization should continually improve the suitability, adequacy, effectiveness and efficiency of portfolio management.

The organization should:

a) evaluate the effectiveness of the portfolio management framework;

b) determine and prioritize improvements to be implemented.

5.10 Governance of portfolios

The means of governance should be established and should include policies, legal considerations, processes, roles and responsibilities, procedures, values, principles and other organizational guidance.

Refer to ISO 21505 for further information on this topic.

6 Managing portfolios

6.1 Overview

This clause describes what should be performed as portfolio management is undertaken on an ongoing basis. Portfolio management should serve as a continuous, seamless mechanism to align portfolios with strategic objectives, maximize benefits, fulfil commitments, and make decisions based on timely and accurate data.

To build and manage a portfolio effectively, portfolio components should be continuously identified, evaluated, selected and authorized, and the status and performance of the portfolio regularly reported. Further, continuous alignment of the portfolio with business strategies and objectives as well as evaluation and control of the balance of the portfolio against a number of criteria should be maintained.

6.2 Defining the portfolio objectives

Using past and current performance and future goals, the organization should identify the objectives of the portfolio and related success criteria. Once agreed, these objectives should be kept under change control. Objectives may be set for different time periods, ranging from immediate to longer term, and should take into account constraints such as the risk tolerance of the organization.

6.3 Identifying potential portfolio components

The organization should continually identify potential portfolio components and verify their relevance by mapping them against the strategic objectives of the organization.

6.4 Defining the portfolio plan

A plan should be developed for the portfolio including:

a) the existing and potential portfolio components and their mapping to the strategic objectives of the organization;

b) the desired outcomes and targeted benefits of the portfolio components;

c) the benefits to be realized and capabilities to be delivered within the defined cost, schedule and constraints;

d) the interdependencies between portfolio components.

The selection of the portfolio components should be dependent upon alignment with the strategic objectives of the organization as well as other considerations.

Following determination of the current state, the organization should determine those portfolio components to be included in the portfolio. This action may be done for more than one portfolio. The portfolio can exist for the purpose of organizational divisions, geographic distinction or other purpose determined to be appropriate by the organization.

The frequency for updating the plan depends on the nature of the organization and the speed with which the environment it operates within is changing.

Validation of alignment of the portfolio components should be done whenever the plan is updated as well as when the strategic plan is reviewed or modified.

6.5 Assessing and selecting portfolio components

6.5.1 Overview

Potential portfolio components should be categorized, evaluated, selected, aligned, authorized and prioritized. These steps require that criteria and methods be defined.

Selection and alignment of portfolio components should enable a balanced portfolio to be defined that maximizes the probability of achieving organizational objectives. Such actions should aim to optimize the return on investment for the organization and maintain risk exposure within the risk tolerance of the organization. Selection should align resource supply and demand.

6.5.2 Assessing current state

To build and manage a portfolio, the current list and status of the portfolio components should be assessed, including:

a) documenting relevant information on each portfolio component;

b) categorizing portfolio components based on the defined criteria (see 5.5);

c) evaluating current resource allocation, availability and constraints;

d) identifying interdependencies among the portfolio components.

6.5.3 Selecting portfolio components

Potential portfolio components should be selected for inclusion in the portfolio based on an evaluation of their contribution to strategic objectives, using the established selection criteria (see 5.5). This selection includes assigning a priority to each of the potential portfolio components and balancing the overall content in relation to:

a) the contribution to achieve strategic objectives;

b) the exposure to risk;

c) the impact on available resources;

d) the impact on the portfolio's risk exposure;

e) the capacity and capability of the organization to absorb the totality of the changes from all components.

6.6 Validating portfolio alignment to strategic objectives

6.6.1 Overview

Organizations should establish strategies to accomplish their objectives, consistent with their vision, mission and values. Changes in any of these factors can result in modification to the strategy of the organization, but also updates to the portfolio's management framework and plan. Portfolio components should deliver outcomes and realize benefits related to the strategic objectives. Aligning between organizational strategy and the intended outcomes and benefits should be a continuous activity. See Figure 2.

6.6.2 Alignment with the strategic objectives of the organization

To enable continuous strategic alignment of the portfolio, the portfolio manager should:

a) identify which strategic objectives are relevant to the portfolio;

b) take action to monitor and control the alignment of the portfolio with the established strategic objectives.

6.6.3 Maintaining alignment with risk tolerance and resource capacity and capability

To enable continuous alignment of the portfolio to the risk tolerance of the organization and resource capacity and capabilities, the portfolio manager should:

a) determine the tolerated risk exposure level of the organization;

b) evaluate to what extent the portfolio is in alignment with the tolerated risk exposure level;

c) align the portfolio’s risk exposure with the tolerated organizational risk exposure;

d) maintain alignment of the portfolio’s cumulative risk with the value created from the successful achievement of strategic objectives;

e) determine that sufficient resource capacity and capability exists to manage the portfolio within the tolerated risk exposure level.

6.6.4 Documenting and evaluating results of alignment actions

To maintain control over changes to the portfolio, the portfolio manager should:

a) document the alignment of the portfolio to the strategic objectives of the organization;

b) document the alignment of the portfolio within risk tolerance;

c) document their decisions and the results of their actions;

d) evaluate the results and impacts of their actions.

6.7 Evaluating and reporting the performance of the portfolio

6.7.1 Overview

Performance metrics should be defined and be relevant to the portfolio and the strategic objectives to which it is aligned. Reporting should be timely and meet the needs of the stakeholders of the portfolio. Attention should be paid to the quality of information on which the performance of the portfolio is evaluated and reported.

6.7.2 Establishing the performance measurement baseline of the portfolio

To manage the performance of the portfolio, the portfolio manager should establish, use or integrate existing systems with metrics and performance baselines that measure both portfolio component specific and aggregate level portfolio performance. The measurements of the portfolio’s performance should be used to enable the portfolio manager to ensure that the total investments of all portfolio components are on track to achieve individual and aggregate level outcomes, benefits and value to strategic objectives.

The portfolio's performance metrics should be specific to the strategic objectives to which the portfolio is aligned and to the organization and should include:

a) portfolio component specific metrics addressing schedule, technical and financial performance;

b) aggregate level portfolio measures tracking the overall health of the portfolio, value creation and benefits realization;

c) performance indicators alerting portfolio management of resources utilization, issues and risks.

6.7.3 Managing portfolio performance

To effectively manage the performance of the portfolio, the portfolio manager should:

a) track portfolio component level performance;

b) track the overall performance of the portfolio;

c) maintain the portfolio's baseline;

d) track contributions of the portfolio's benefits and compare them with the current strategic objectives;

e) provide forecasting, including, but not limited to, resource and capacity utilization and strategy and risk.

Further, to manage performance of the portfolio, the portfolio manager should analyse:

— both top-down and bottom-up the portfolio component composition, alignment and performance;

— the impact of the performance of individual portfolio components on the performance of the entire portfolio and achievement of strategic objectives;

— the impact of the interaction among the portfolio components and the impact of these interactions on the performance of the portfolio.

6.7.4 Reporting the performance of the portfolio

To provide appropriate information to stakeholders, the portfolio manager should:

a) perform portfolio reporting;

b) maintain a reporting cycle;

c) integrate the reporting cycle across the portfolio.

6.7.5 Managing the integration of benefits

To improve the likelihood that the benefits are realized by the portfolio components and to enable future actions of the portfolio or the general operations of the organization, the portfolio manager should verify:

a) identification of benefits;

b) identification of benefits realization time frame;

c) the realization and capture of benefits by the organization;

d) integration of benefits;

e) forecast of future investment gains or losses;

f) tracking of outcomes that are a prerequisite for the required benefits;

g) tracking of actual and forecast benefits;

h) identification of gaps where forecast benefits are not likely to meet expectations.

6.8 Balancing and optimizing the portfolio

6.8.1 Overview

The portfolio manager should balance and control the portfolio, including, but not limited to, maintaining the pipeline of portfolio components, optimizing resources, managing the portfolio's risks and change, and optimizing the synergies among portfolio components.

6.8.2 Optimizing portfolio components

To optimize the portfolio and its portfolio components, the portfolio manager should:

a) manage the benefits to capture the full expected and stated value, such as using a defined assessment process and reviewing the benefits realization plan for alignment with the strategic plan;

b) plan an approach that considers factors such as financial, organizational values, stakeholder needs, and legal and regulatory requirements;

c) continuously analyse and improve the realization of benefits from the portfolio components including reviewing success criteria.

6.8.3 Maintaining the portfolio

The portfolio manager should use the defined approaches, process and criteria to enable consideration of potential portfolio components for inclusion in the portfolio by:

a) undertaking an analysis based upon standard selection criteria:

   1) identifying additional criteria to be considered;

   2) determining the prioritization of potential portfolio components;

   3) providing a recommendation for which potential portfolio components should be selected for inclusion in the portfolio;

b) maintaining the portfolio by:

   1) continually evaluating potential portfolio components for inclusion in the portfolio;

   2) moving, modifying, closing or terminating portfolio components within the portfolio;

   3) balancing resources and other assets throughout the portfolio.

6.8.4 Optimizing resources

To optimize resources, the portfolio manager should:

a) prioritize the portfolio components based on defined criteria;

b) capture resource demands of portfolio components;

c) achieve a balance between resource demand and supply;

d) track changes for resource demands;

e) review historic data from resource demands and map current trends;

f) provide monitoring and controlling methods to achieve resource optimization within the portfolio and across the portfolio components;

g) balance the supply and demand for, and allocation of, resources using the defined approaches and criteria;

h) identify changes in resource demands over an identified and agreed upon timeline;

i) identify changes required to be made in regard to the portfolio components such as de-scoping, cancelling, rescheduling or other related actions to achieve optimization of required resources;

j) develop agreement among stakeholders;

k) identify and resolve conflicts in resource utilization.

6.8.5 Managing portfolio risks

To manage risks to the portfolio, the portfolio manager should use the defined risk policy for the portfolio to:

a) determine the level and tolerance of risk that is acceptable within the portfolio;

b) develop or adapt an analysis technique for risks held at the portfolio level;

c) identify risks at the portfolio level based on identified risks for each portfolio component;

d) analyse and prioritize the portfolio's risks considering such items as priority of strategic objectives, goals, benefits and the relationships among components;

e) evaluate the risks over time including changes that should be monitored for risk impact and changes in portfolio composition.

6.8.6 Controlling changes to the portfolio

When controlling changes to the portfolio, the portfolio manager should use a defined change control approach to:

a) review portfolio component priority;

b) develop and implement recommendations for changes to the portfolio, including, but not limited to, schedule, risk, cost, resources, impact and degree of strategic alignment;

c) develop and implement recommendations regarding the adding, moving, modifying or removing of portfolio components;

d) provide communication to portfolio's stakeholders; decisions regarding changes to the portfolio's baseline and plan should be made with reference to the defined decision rights.

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