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Asset management — Guidance on the alignment of financial and non-financial functions in asset management

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National foreword

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A list of organizations represented on this committee can be obtained on request to its committee manager.

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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 document 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 251, *Asset management*.

This second edition cancels and replaces the first edition (ISO/TS 55010:2019), which has been technically revised.

The main changes are as follows:

— the text has been updated to be aligned with ISO 55001:2024;

— the retitling and revision of Annex E;

— the addition of new Annexes H, I and J.

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Introduction

The ISO 55000, ISO 55001 and ISO 55002 asset management standards raise awareness of the importance of improving alignment between an organization's financial and non-financial functions, and this document provides guidance on how to achieve this. Alignment of these functions enabling the realization of value derived from the implementation of asset management is detailed in ISO 55000, ISO 55001 and ISO 55002, particularly ISO 55002:2018, Annex F.

The guidance in this document is consistent with the requirements of ISO 55001 for an asset management system but does not add new requirements to ISO 55001 or provide interpretations of the requirements of ISO 55001.

For an example of an organization aligning its asset management functions, see Annex F.

As used in this document, financial functions refer to processes and activities such as managerial costing and accounting, budgeting, financing and valuation related to the assets. Non-financial functions are the complementary processes and activities, for providing a product or service from the assets.

The asset management function may include both financial and non-financial functions.

The definition of "asset" in ISO 55000 is broader than that of the United States (US) Generally Accepted Accounting Principles (GAAP) or the International Financial Reporting Standards (IFRS). The term "asset" as primarily used in this document is defined in ISO 55000. See Annex H.

In many organizations, the financial and non-financial functions of asset management are inadequately aligned. Often the financial accounting functions are predominantly focused on retrospective reporting of accounting/regulatory financial activities. However, there is a growing awareness in organizations of the need to focus on providing a managerial costing approach to support decision-making for the future. At the same time, the non-financial functions are recognizing the need to improve their understanding of the financial implications of their activities. These are examples of moves towards better alignment of the financial and non-financial functions with the aim of better decision-making and value realization.

Lack of alignment between financial and non-financial functions can be attributed to silos in an organization, including reporting structures, functional/operational business processes and related technical data. Reference [23] advises that "… silos [department/functional specialization] are necessary to allow for the required level of specialization, but if these silos [department/functional specialization] do not communicate, inefficiencies and errors in asset management result" and that "when asset management implementation fails, it is often because asset management staff and senior management are not in alignment".

Alignment should prudently work both "vertically" and "horizontally". Vertical alignment "top-down and bottom-up information flow" means that financial and non-financial asset-related directives by top management are informed by accurate upward information flows, effectively implemented within the appropriate levels of the organization. Horizontal alignment means that financial and non-financial information that flows between departments (conducting functions such as operations, engineering, plant maintenance, financial accounting, financial management and risk management) uses the same terminology and refers to the assets identified in the same way. See the asset mapping table in Annex H.

The aim of this document is to encourage organizations to support alignment between these asset management functions and to provide guidance on how such alignment can be achieved. It also promotes the benefits that can be achieved for an organization and its stakeholders by having alignment of these asset management functions better understood, implemented and improved. This enables an organization's functional areas to share information and collaborate to achieve the organization's objectives.

This document can assist users in applying the concepts of ISO 55000 and fulfilling the requirements of ISO 55001. It provides additional advice and guidance over and above the explanations outlined in ISO 55002 on the benefits to be realized for an organization through alignment.

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It is intended for use by personnel, at all levels in an organization, who are involved in asset management, including:

— top management and decision-makers, to derive the benefits that are achievable by better alignment between financial and non-financial functions;

— those in asset-related multidisciplinary functions who provide information to support decision- making or rely on the outcomes of those decisions;

— a wide range of personnel, including those who have responsibility for the technical planning, design, construction, operation, maintenance and performance of the assets, and those with financial responsibilities such as accounting, financial planning, budgeting and financial reporting.

Knowledge and understanding of terminology and common language used by financial and non-financial functions can facilitate discussion, communication and exchange of information between these functions. Clauses 4 to 9 and the related annexes provide a range of information on financial and non-financial functions in asset management, including information on asset management accounting principles.

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Asset management — Guidance on the alignment of financial and non-financial functions in asset management

1 Scope

This document gives guidance on the alignment between financial and non-financial asset management functions, to improve internal controls as part of an organization's management system.

This document is applicable to all types of assets and by all types and sizes of organizations.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 55000, *Asset management — Overview, principles and vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 55000 and the following apply.

ISO and IEC maintain terminology 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
financial accounting
process of recording, summarizing and reporting the transactions resulting from an organization's operations over a period of time

Note 1 to entry: These transactions are summarized in the preparation of financial statements (including the balance sheet, income statement and cash-flow statement) that communicate the organization's operating performance over a specified period.

3.2
management accounting
accounting to assist management in the formulation and implementation of an organization's strategy

Note 1 to entry: Management accounting usually requires partnering across different *functions* (3.20) in an organization for management decision-making, devising planning and performance management systems, and providing expertise in financial reporting and control.

3.3
managerial costing
costing used internally by an organization to ensure that information for decisions reflects the characteristics of the organization's resources and operations

Note 1 to entry: For further information on managerial costing, see Reference [15].

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3.4
financial function
work, or portions of work, that pertain to financial management

EXAMPLE Financial reporting, budgeting, financing, *valuation* (3.12), financial planning and analysis, *management accounting* (3.2), tax accounting.

Note 1 to entry: In organizations, there is sometimes no separation between financial and *non-financial functions* (3.5); some functions can be blended. Those distinctions should be addressed in internal strategic asset management plans or policy.

3.5
non-financial function
work, or portions of work, that combine with an organization's *financial functions* (3.4) in delivering its services or products

Note 1 to entry: Asset planning, acquisition, marketing, operations, maintenance.

3.6
internal control
process used by an organization's managers to help it achieve its objectives

Note 1 to entry: Internal controls help an organization to run its operations efficiently and effectively while safeguarding assets, report reliable financial and non-financial information about its operations, and comply with applicable laws, regulations and standards.

Note 2 to entry: Internal controls apply to all activities, irrespective of whether they are financial or non-financial.

Note 3 to entry: In order to achieve a high level of assurance of the organization's internal controls, segregation of duties is required (e.g. avoiding having the same individual responsible for decision-making as well as asset custody and record keeping; having procedures to prevent and identify waste, fraud abuse and mismanagement, including due diligence omissions, procrastination, dereliction of duty and toleration of incompetence).

Note 4 to entry: Internal controls support sound decision-making, considering risks to the achievement of objectives and reducing them to acceptable levels through cost-effective controls.

Note 5 to entry: This definition of internal control is derived from Reference [11], which also provides further useful information on this topic.

3.7
asset register
record of asset data considered worthy of separate identification and accountability

Note 1 to entry: Financial or accounting asset registers are databases or systems used to describe and manage the organization's financial accounts and *management accounting* (3.2).

Note 2 to entry: Non-financial asset registers (technical or operational) are databases or computerized systems in which relevant technical or operational data and information of an asset are kept.

3.8
capital expenditure
CapEx
expenditure on acquisitions of, or improvements to, assets

Note 1 to entry: Based upon accounting standards and organizational policy, CapEx usually relates to relatively large (material) expenditure, which has benefits that are expected to last for more than 12 months.

3.9
operational expenditure
OpEx
recurrent or specific non-capital expenditures required to provide a service or product

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3.10
total expenditure
TotEx
sum of *capital expenditure* (3.8) and *operational expenditure* (3.9) over a period of time

3.11
alignment
deliberate arrangement, relationship and mutual understanding of common concerns within a particular activity or among activities

3.12
valuation
process of determining the current value of an asset

Note 1 to entry: Valuation methods are numerous. Values are expressed in monetary terms.

Note 2 to entry: Valuations may be made to a single asset, a group of assets or an entire enterprise.

3.13
book value
monetary expression at which an asset or group of assets are carried on a balance sheet

Note 1 to entry: Book value is also known as "carrying amount" or "carrying value".

3.14
residual value
estimated financial amount that an organization would expect to obtain from disposal of an asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its *useful life* (3.15)

3.15
useful life
period over which an asset or class of assets are expected to be available for use by an organization

Note 1 to entry: Useful life is determined by factors such as the economic, technological, physical and functional performance of the assets or asset system, which demands an understanding between *financial functions* (3.4) and *non-financial functions* (3.5) depending on the context (e.g. market, cost recovery, maintenance planning, long-term planning).

Note 2 to entry: The applicable period is dependent on the nature of the asset or asset system and can be elapsed time, operating hours, number of cycles, number of units of production, etc.

3.16
depreciation
systematic allocation of the depreciable amount of an asset over its *useful life* (3.15)

Note 1 to entry: While "depreciation" can be used for both tangible and intangible assets, "amortization" is normally used for intangible assets only.

3.17
fair value
price that would be received to sell an asset, or paid to transfer a *liability* (3.18), in an orderly transaction between market participants at the measurement date

3.18
liability
present obligation of the organization arising from past events, the settlement of which is expected to result in an outflow of resources from the organization

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3.19
six capitals
classification of the different kinds of value in an organization that can be transformed in its operations, namely financial, manufactured, intellectual, human, social and relationship, and natural

Note 1 to entry: Within the framework of integrated reporting, an organization is encouraged to provide a fuller picture of how it creates value through a combination of related quantitative and qualitative information.

3.20
function
purpose of each area or division of an organization that performs a specific activity, provides specialized information or implements procedures

3.21
domain
broad area of management responsibility in an organization

EXAMPLE Assets, human resources, customers, procurement, regulators.

Note 1 to entry: A domain can include one or more *functions* (3.20).

3.22
life cycle cost
LCC
total cost incurred during the life cycle

Note 1 to entry: See also *life cycle costing* (3.25).

[SOURCE: IEC 60050-192:2015, 192-01-10]

3.23
compliance
mandatory requirement, performance or design, imposed upon by or agreed with an external organization

Note 1 to entry: Compliance is a required action, behaviour or condition.

Note 2 to entry: A compliance requirement is enforceable. Failure to achieve compliance can result in penalties and require correction, compensation or restitution.

Note 3 to entry: The term “conformance” is often erroneously used as a synonym for the term “compliance”.

EXAMPLE Organizations must comply with financial reporting requirements but should conform to the non-financial reporting plan.

3.24
best value
expected outcome of an acquisition that, in the organization’s estimation, provides the greatest overall benefit in response to a requirement

3.25
life cycle costing
process of economic analysis to assess the cost of an item over its life cycle or a portion thereof

[SOURCE: IEC 60050-192:2015, 192-01-11]

4 Why alignment between financial and non-financial functions is important

4.1 General

Alignment between financial and non-financial functions is important in the implementation of a successful asset management system. Lack of organizational alignment can be due to barriers within the organization (e.g. language/terminology differences, information/data standard quality differences, poor coordination

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between the organization's financial and non-financial functions in asset management). Top management often struggles with many asset management related questions due to a lack of alignment. Some examples of questions include the following:

— How can top management be sure that they get the best value for their stakeholders from the assets?

— How do the assets contribute to the delivery of the organization's objectives? Which assets are critical for it?

— What are the risks and opportunities to the organization's objectives arising from its assets?

— What level of investment should be made in the assets over both the short and longer term (TotEx) to deliver the organization's objectives and how does top management prioritize this investment?

— What is the cost of delivering products or services to meet customer satisfaction and how can the organization use this as an input for pricing or service delivery?

— How does top management determine the cost impacts of changes in the six capitals, and the resilience of the organizational assets to these changes?

— How can top management know the life cycle cost (LCC) of assets?

— Is top management making decisions that provide short-term cost savings but, due to lack of adequate asset management involvement, lead to higher long-term costs?

— How can top management get the necessary funding commitment to ensure the long-term financial sustainability of assets and continue meeting the objectives of the organization?

— How can the organization obtain enough information on the asset base for integrated reporting purposes, enable correct and timely decisions, and understand the nature and use of seemingly conflicting information from different sources?

— Are the stakeholders confident about the asset verification/valuation/existence/necessity/impairment tests?

— Does the organization have the financial information to make evidence-based asset management decisions?

— What assets are not delivering the value expected and what assets are costing more than anticipated?

— What liabilities, and hence cost, are the assets exposing the organization to?

— Do the organization's financial statements really reflect the state of the asset portfolio including leased assets?

— For the outsourced services, how are the associated costs tracked and managed through an appropriate internal control?

— How can top management obtain/maintain competitive advantage through the use of assets?

As illustrated in the above questions, all parts of the organization should work together, to share and utilize information, to provide the transparency, insight and necessary answers, and to support asset management reporting and decision-making. This document provides a general solution to these questions in the form of better alignment of functions across the organization, enabling the realization of the benefits detailed in 4.2. It does not seek to explicitly answer these questions individually but instead guides users to adopt the concepts contained within this document to find their own answers to these and other pertinent questions.

Asset management deals with the challenge of maximizing value derived from the assets. A significant explanation of the value proposition can be found in ISO 55002:2018, Annex A.

The concept of value in asset management is broader than the more constrained specific definition of value in accounting terms, where the various accounting standards deal with value as part of the valuation of assets process. The value in asset management can be expressed in both monetary and non-monetary terms

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and an aligned understanding of financial and non-financial value is needed to determine decision-making criteria.

Financial planning, decision-making and reporting are crucial to asset management and, conversely, asset management has major impacts on financial aspects. Accordingly, close coordination of financial and accounting functions with the non-financial asset management functions is essential to meeting organizational objectives.

4.2 Benefits of alignment

Alignment and coordination between financial and non-financial functions related to assets and asset management can lead to resolution of many of the issues listed in 4.1, as follows:

a) Improved expression of asset criticality and risk in financial terms, which helps to implement more robust risk controls.

b) Integrated and efficient asset investment planning and prioritization for short- and longer-term timescales.

c) Improved understanding of longer-term funding needs relating to assets that supports informed decision-making for financing and budgeting, leading to long-term predictable and sustainable funding mechanisms.

d) Improved options analysis and decision-making on investment projects based on more complete information from both financial and non-financial functions.

e) Improved decision-making and communication on pricing for the organization's products and services based on sound practices such as managerial costing, and a better understanding of value to customers and stakeholders.

f) More accurate, complete, transparent, and timely registration and reporting of all changes to asset management information affecting the financial functions, including functions of accounting and finance, auditing, regulating, tax and insurance. This includes for accounting purposes when a self-constructed asset is determined to be substantially complete and ready for use, at which time the cost of the capital project is taken from a construction in the progress account and capitalized for depreciation or amortization purposes.

g) Improved methodology and procedures to enable financial and non-financial staff to efficiently share knowledge and information whereby both financial and non-financial staff use commonly agreed terminology, which can lead to collective understanding.

h) Maintained or improved competitive advantage.

i) Improved internal controls as part of the wider management system of the organization.

j) More efficient measurement of operational performance and the organization's overall performance.

k) More efficient procedures for capital and operational budgeting processes.

l) Better alignment of long-term financial planning and asset life cycle planning.

m) Collaboration across departments to optimize resources and reduce duplication.

n) Improved depreciation methodology.

o) Improved teamwork, collaboration, clarity, transparency, and availability of information and up- skilling for financial and non-financial staff.

p) Better understanding of what services can be provided, based on available funding, enabling meaningful trade-off analyses when reviewing service and funding gaps.

q) More reliable knowledge of cost inputs for pricing, considering all LCCs originating from financial and non-financial functions (see Annex G).

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Improved alignment between financial and non-financial functions helps to improve the quality of information used to support an organization's decision-making and value maximization. Such improved alignment also encourages both financial and non-financial practitioners to speak the same language.

5 Enablers for alignment

5.1 General

Business processes, leadership and governance are key enablers for the alignment of financial and non-financial asset management activities. Data, information, knowledge, capabilities and other elements required to support alignment among different levels of the organization are addressed.

5.2 Processes, leadership and governance

5.2.1 Processes

Defined processes can be significant enablers for the alignment of financial and non-financial asset management functions. Processes should be properly supported by documented information and opportunities identified to link tasks across different levels, functions and processes. For example, the process used by an asset manager to bring a new asset online (non-financial) should contain a task to capture total installed cost and send/link this to the accounting function where it can be used as the cost basis of the asset (financial). This example of a co-developed process enables timely and accurate data and information for asset cost, installation date and expected useful life to be captured in both the financial and non-financial asset registers. The processes developed within an organization should use common terminology across the financial and non-financial functions and focus on the end-to-end need rather than being governed solely by function.

5.2.2 Leadership

To achieve alignment between the financial and non-financial asset management functions within the organization, top management should demonstrate leadership and commitment by:

a) promoting and encouraging collaboration and clarity, transparency and availability of information for financial and non-financial staff;

b) ensuring alignment between the objectives of the various financial and non-financial functions in conformity with the defined overall organizational objectives;

c) ensuring training for appropriate people (from top management to frontline operations) involved at intersecting processes, between financial and non-financial asset management disciplines, to promote communication and common understanding of the terminology being applied;

d) ensuring the availability of adequate resources capable of promoting and implementing cross-functional collaborative teams with a focus on continual improvement;

e) ensuring both financial and non-financial functions have adequate awareness and influence in decision-making processes;

f) ensuring consistency of the various policies in their intent, language and communication; ensuring implementation and maintenance of inter-departmental shared granularity to identify how an asset is recorded;

g) ensuring alignment in risk management of the various financial and non-financial functions in conformity with the overall risk management framework.

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5.2.3 Governance

Governance should provide a framework to align financial and non-financial asset management functions. This is demonstrated by a governance process and policies designed to establish alignment relationships between stakeholders that can address any conflicting interests regarding how assets are managed.

Figure 1 suggests key elements of a framework that can be adopted to achieve alignment.

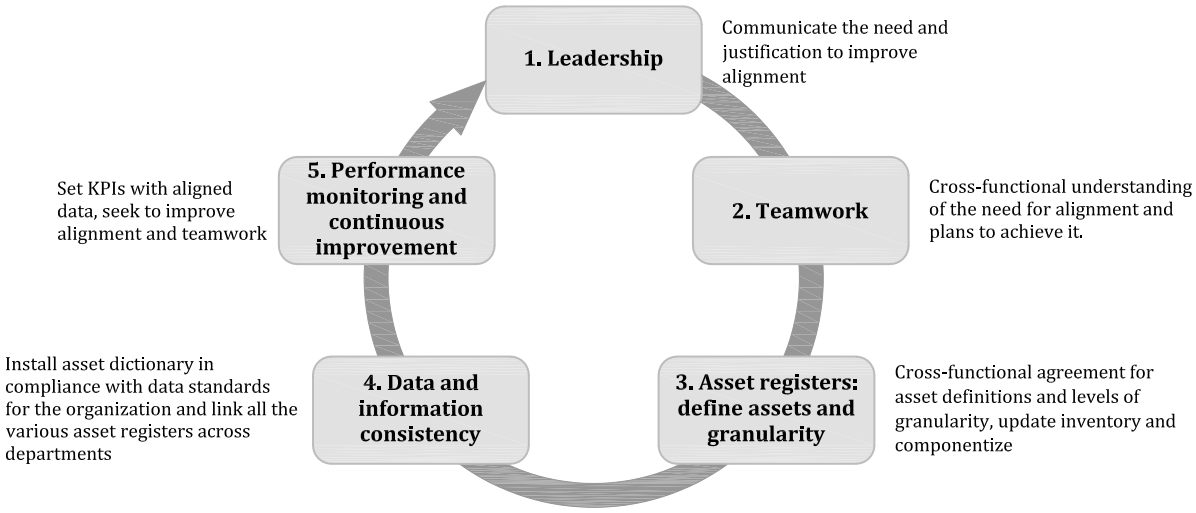

Figure 1 — Key elements of a framework to achieve alignment

The governance framework should address the alignment of financial and non-financial functions in relation to risk management (particularly financial risk) within the context of the common overall risk management framework. ISO 55002:2018, Annex E, provides further detail on risk management. Another useful reference on risk management is the COSO framework[11].

5.3 Policy, strategy, data and information

5.3.1 Asset management policy support

Top management, through the asset management policy, should acknowledge and endorse the role of alignment between the financial and non-financial functions. Top management should provide commitment to the provision of the information, knowledge and capabilities required to achieve, maintain and continually improve alignment. Such information should be available for use within the organization's non-financial decision-making functions, e.g. replacement, renewal, maintenance, training, inspection. This ensures that decisions are informed and balance the financial needs as well as the organization's wider performance requirements.

5.3.2 Strategic asset management plan support

Department/division managers, through the strategic asset management plan (SAMP), should specifically address the high-level requirements to capture, store and share the information, knowledge and capabilities required to support alignment between financial and non-financial asset management activities. ISO 55002:2018, Annex C, provides significant guidance on the format and content of a SAMP.

5.3.3 Data and information

Accurate, reliable, and current data and the resulting information are key elements of asset management. When data are processed, interpreted, organized, structured or presented to make them meaningful or useful, they are called "information". Data and information management is of utmost importance to facilitate and ensure the collection, currency, accuracy, availability, integrity and completeness of data and

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information. Data management should cover data generated within the organization as well as data coming from outsourced or contracted functions.

Data and information should be useful and worthwhile to collect, record, report and analyse. Expected benefits should justify the expected cost. As Reference [13] states: "If financial [and non-financial] information is to be useful, it must be relevant and faithfully represent what it purports to represent. The usefulness of financial information is enhanced if it is comparable, verifiable, timely, and understandable."

After determining its reporting, planning and analysis requirements, an organization should determine the data needed to facilitate the reporting and planning functions and the best source of such data. Both financial and non-financial areas are likely sources of the required data. Emerging and evolving business and technology innovations for data and information will continue to provide emerging means to support alignment.

The organization should ensure that both financial and non-financial functional areas strive to collaborate on data collection and management, and also should ensure data access for the right users.

5.4 Non-financial functions in asset management

There are a range of non-financial functions involved across the whole life cycle of assets, from creation through to disposal, that have financial implications. For example, the operational phase of the asset life cycle represents a significant proportion of LCC, particularly for long-life infrastructure assets. The financial and non-financial functional areas should collaborate to find ways to perform the necessary operational and maintenance activities at an optimized cost and acceptable risk. It is important that staff with knowledge of these activities are involved at the decision-making stage of acquiring the assets, so that accurate life cycle costing can be assessed and considered.

Financial and non-financial teams should ensure alignment in non-financial asset life cycle activities such as:

— planned shutdowns;

— the balance between preventive and corrective maintenance;

— when to intervene with an asset replacement, upgrade or disposal;

— the possible outsourcing of activities;

— ensuring adequate funding is available to maintain data used for decision-making.

More information on how to achieve alignment between the financial and non-financial functions required across the various life cycle activities is provided in Annex E.

5.5 Terminology for financial and non-financial alignment

Physical-asset-holding organizations should embrace the development of common terminology within their organization. This is to ensure that all stakeholders have a clear understanding and agreement in relation to the meaning of various terms commonly employed in differing professional sectors such as finance, operations, information and communications technology (ICT), etc. This process also provides a means of addressing the requirements of ISO 55001:2024. Various terms designate accounting treatment (e.g. a "repair" means the cost may be expensed in the period the repair was made, while a "betterment" or "improvement" should be treated as a CapEx).

6 How to achieve system alignment

6.1 General

Organizations often deal with several different asset information management systems, designed for specific purposes by different functions, very often because of piecemeal and ad hoc development and investment. Organizations benefit from asset information management systems that are designed and developed with a common purpose; however, this is often not the case. To address this common alignment issue, data within

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the different systems should comply with the data standards of the organization, to avoid duplication, misuse and misunderstanding.

Staff in the different functions should have basic knowledge as to where data in the systems is used and why the data can contain critical information for other functions. This means that staff should be trained regularly in common terminology and understanding.

6.2 Information systems

Organizations use their information systems to register, manage, analyse and report on asset data and activities. These systems may comprise computer hardware, computer software, databases and data warehouses, telecommunications to connect hardware to form a network, and people to operate the systems (human resources and procedures). Financial and non-financial data from within these various information systems is often needed to facilitate alignment of the financial and non-financial asset management processes, particularly when seeking to determine value derived from assets and to facilitate long-term financial planning for asset management.

With relation to tangible assets, different departments typically desire different levels of asset information, according to their specific needs. In the general case, the financial accounting department can satisfy their direct needs by grouping assets and identifying the components of assets with different useful lives for accounting depreciation. Other financial functional areas involved in management accounting can require different levels of detail for forward financial planning on asset replacements, etc. On the other hand, plant maintenance and operations need to register assets in close relation with their functions. For example, plant maintenance should further break down assets that are independent functional units (e.g. each machine) into components with different maintenance schedules. Therefore, while departments normally have different granularity needs, to achieve aligned financial/non-financial information, it is desirable that all departments generating or utilizing asset-related information:

a) reach agreement on the common levels of asset detail, with which different departments can drill down to or roll up to their required asset componentization, to distinguish the specific needs for each department or user;

b) implement the common levels of asset detail into the organization's asset management system, with conformity to them being mandatory regardless of any changes of staff in charge of asset-related functions in each department;

c) implement procedures for maintaining the linkage between financial and non-financial information systems to the desired levels of asset detail.

Technologically advanced organizations can integrate their asset data sets from within each of these different information systems through the deployment of analytics and decision support software solutions. The benefits of alignment in this manner are that it does not require duplication of data across information systems, and it enables a wide variety of analytical capabilities through the incorporation of different asset information at various stages of the asset life cycle.

6.3 Data management

Data management is a subset of information management. It comprises all disciplines related to managing data that are used by the organization in both financial and non-financial functions. To deliver the information requirements of ISO 55001, financial and non-financial functions should collaborate in evaluating the information needed to deliver asset management objectives and ensure that appropriate asset management information is available.

Each data user (or user group) within an organization needs to understand the data and be confident that these data are fit for purpose to meet the organizational objectives. Properly maintained metadata and fundamental classifications of assets are useful in supporting these alignment requirements. It is of vital importance that organizations:

a) clearly define, develop and communicate their processes for the capture and creation of data, for managing and dissemination of data, and for data maintenance and updates;

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b) ensure these processes are understood and deployed by the end users;

c) establish and enforce performance measures that monitor and record how current, complete and accurate the data are;

d) make arrangements to maintain current, complete and accurate data when implementing changes to existing systems and tools, or when introducing new ones.

NOTE ISO 55013 provides guidance on data for asset management.

The registration of data should ensure that each data element has the same meaning for all data users. The data registration, based on asset transactions, should trigger the necessary transactions in the relevant database(s). For example, registration of an investment in a physical asset should appear in both the non-financial asset register and have a counterpart in the financial accounting database. See Annex I for examples of the alignment of asset registers.

7 How to achieve asset-register-related alignment

7.1 General

Traditionally, an organization's different departments carry data and information on assets to suit their own purpose. That data and information is generally recorded in departmental asset registers, with each department doing so independently. Therefore, an asset's financial and non-financial data and information may be recorded in different registers that should be linked, so the organization can have a comprehensive view of all the relevant information necessary for decision-making. For that reason, a key to the alignment of an organization's financial and non-financial functions lies in managing and aligning the different asset registers.

Asset registers are the tools that organizations use to assemble and manage pertinent information (e.g. physical, operational, financial) about their assets/asset systems (tangible and intangible). Organizations can utilize several different asset registers to support the breadth of their operations. Asset registers are essential for good asset management and can range from simple (e.g. spreadsheet ledgers) to more complex software applications/databases [e.g. an enterprise resource planning (ERP) system, computerized maintenance management system (CMMS), geographic information system (GIS), financial/accounting information system (FIS), associated visualization tools].

7.2 Financial asset registers

Financial asset registers are used for managing the organization's financial functions. They are used for financial reporting purposes, as well as for other activities, including accounting, taxation, insurance, valuation and legal requirements. Other financial registers are typically developed for managerial costing and are purely for the organization to use internally to ensure that information used for decision-making reflects the characteristics of the organization's resources and operations. Financial asset registers should be continuously maintained throughout all phases of the asset life cycle (i.e. new assets added, assets divested) to reflect the accurate book value of assets. For example, asset disposals noted in the non-financial asset register should be properly reflected in the corresponding financial asset register records.

7.3 Non-financial asset registers

The non-financial asset registers are the organization's definitive key source of information for all the assets it manages (tangible and intangible). Operational level asset information systems including maintenance management, telemetry/supervisory control and data acquisition, and modelling systems link to the non-financial asset registers. More complex non-financial asset registers use asset hierarchical modelling to define asset components, their physical locations and their role in specific processes. Non-financial asset registers should be continuously maintained throughout all phases of the asset life cycle (i.e. new assets added, assets improved, assets moved, assets divested) to reflect a complete and current asset inventory.

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