

ISO 55000 In 2014 Asset Management System

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WELCOME TO THE SEMINAR!



Overview

- Introduction
- What is ISO 55000 ?
- Development of ISO 55000
- Principles of Asset Management
- Definition
- ISO 55000 clauses
- Links with Sustainable Development
- Asset Management Challenges

Introduction

- In 2004 the UK Institute of Asset Management, in conjunction with British Standards Institution, developed PAS 55, the first publicly available specification for optimized management of physical assets

Introduction

- This has proven very successful, with widespread adoption in utilities, transport, mining, process and manufacturing industries worldwide

Introduction

- The 2008 update (PAS 55:2008) was developed by 50 organisations from 15 industry sectors in 10 countries

Introduction

- The International Standards Organisation (ISO) has now accepted PAS 55 as the basis for development of the new ISO 55000 series of international standards

What is ISO 55000

The ISO 55000 series will comprise three standards:

- ISO 55000
- ISO 55001
- ISO 55002

What is ISO 55000

- **ISO 55000** provides an overview of the subject of asset management and the standard terms and definitions to be used

What is ISO 55001

- **ISO 55001** is the requirements specification for an integrated, effective management system for assets

What is ISO 55002

- **ISO 55002 provides** guidance for the implementation of such a system

Development of ISO 55000

- The development of these standards is ongoing, through ISO Committee PC251, with 26 countries participating and 12 countries/ locations observing (Hong Kong participating as an observer)
- The standards have an expected publication date of February 2014

Development of ISO 55000

- preliminary meeting in London in June 2010
- four formal meetings of the full PC251 committee have occurred, in Melbourne (Australia), Arlington (USA), Pretoria (South Africa) and Prague (Czech Republic)

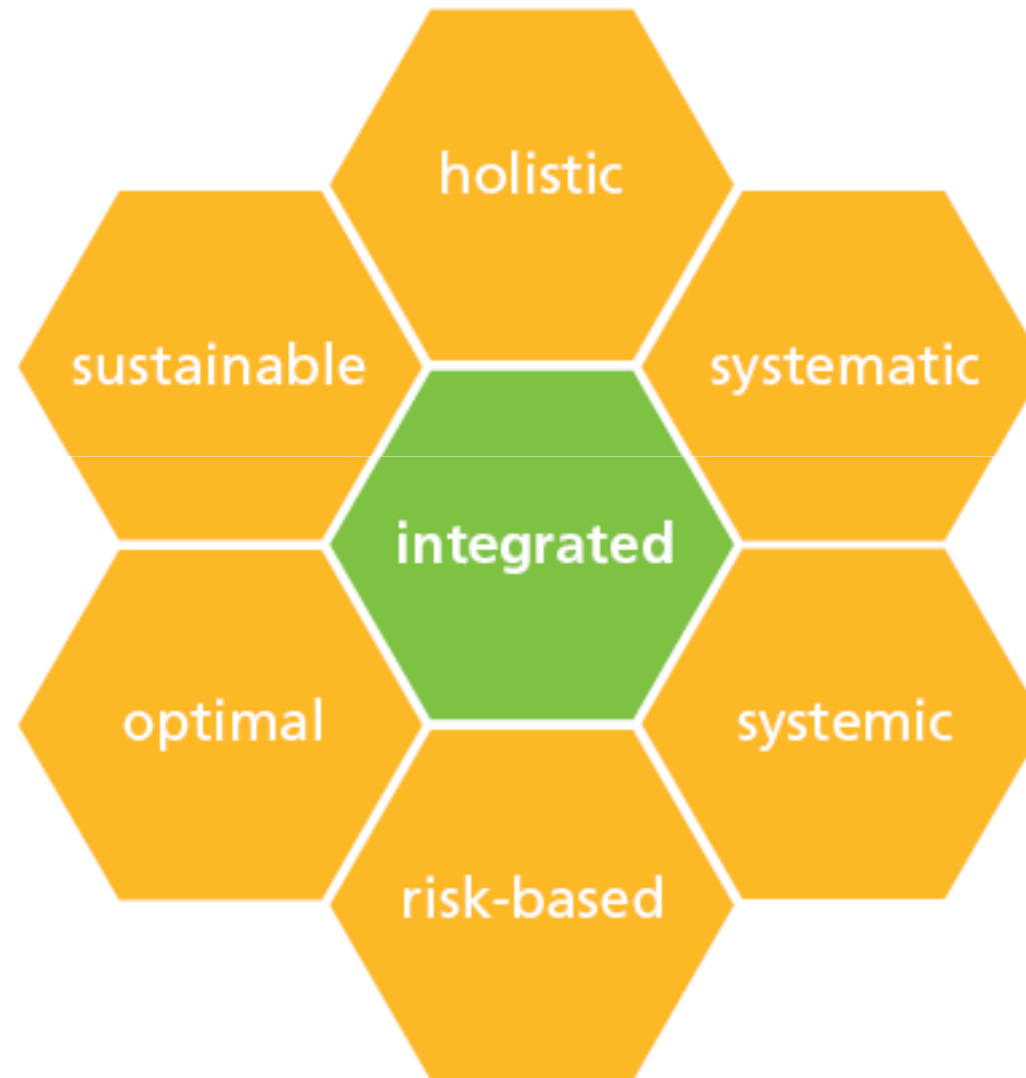
Development of ISO 55000

- two cycles of “Working Drafts” completed
- two cycles of “Committee Drafts” completed
- we are now in the “Draft International Standard (DIS)” status

Principles of asset management

- holistic
- systematic
- systemic
- risk-based
- optimal
- sustainable
- integrated

Principles of asset management



Definition – Asset(s)

- plant, machinery, property, buildings, vehicles and other items that have a distinct value to the organization
- *other asset types, such as human assets, financial assets, information assets and intangible assets are not the main focus of the standard*

Relation to other asset types

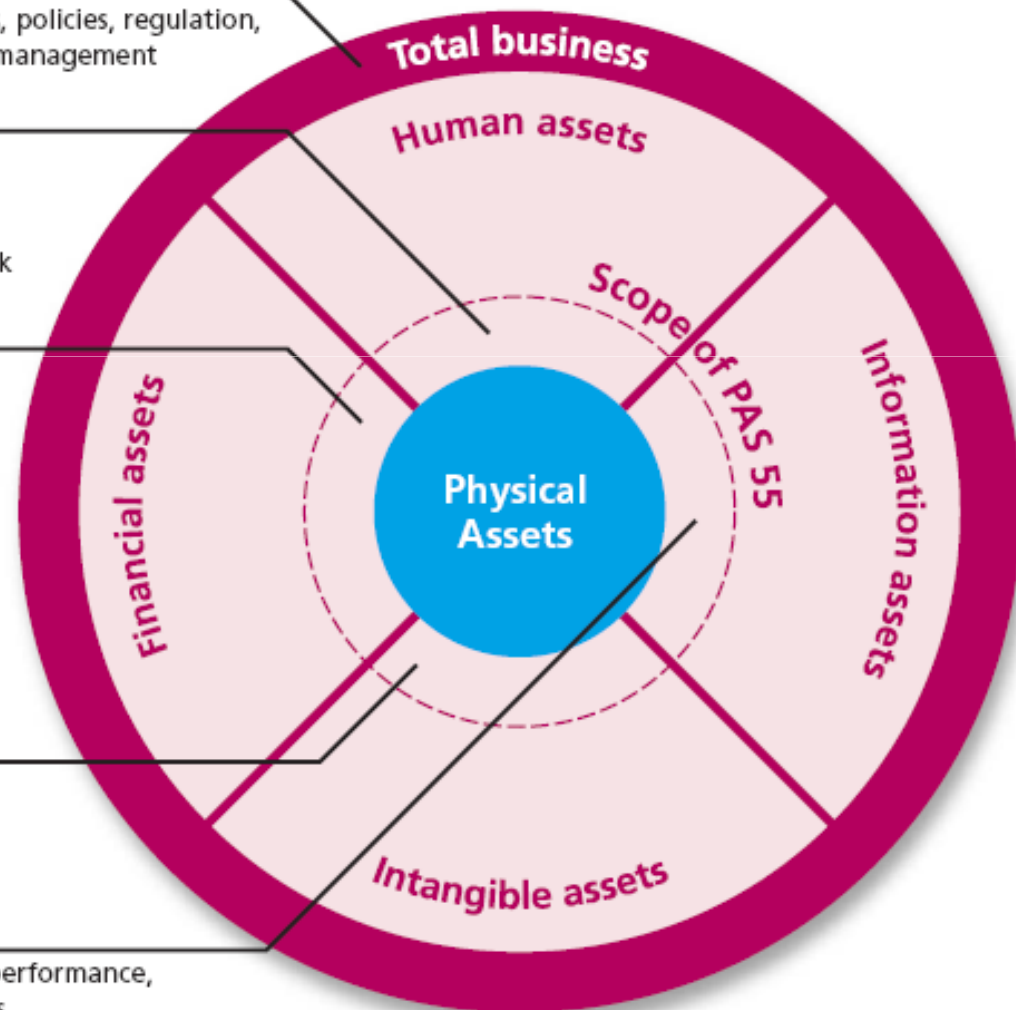
Vital context: business objectives, policies, regulation, performance requirements, risk management

Important interface: motivation, communication, roles and responsibilities, knowledge, experience, leadership, teamwork

Important interface: life cycle costs, capital investment criteria, operating costs, value of asset performance

Important interface: reputation, image, morale, constraints, social impact

Important interface: condition, performance, activities, costs and opportunities

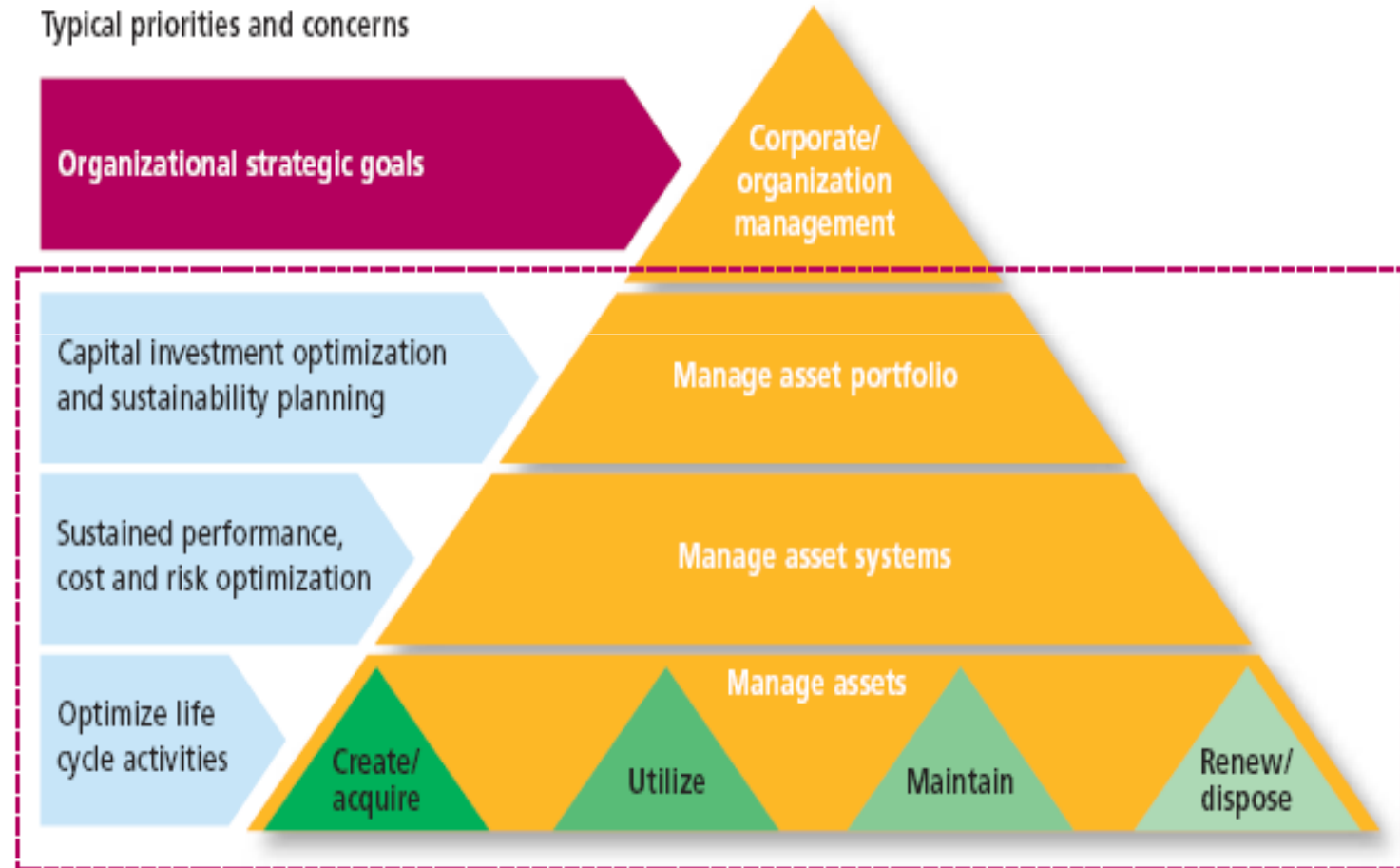


Definition

- asset portfolio - complete range of assets and asset systems owned by an organization
- asset system - set of assets that interact and/or are interrelated so as to deliver a required business function or service
- critical assets – assets that are identified as having the greatest potential to impact on the achievement of the organizational strategic plan

Levels of assets and their management

Typical priorities and concerns



Definition

- sustainable - achieving or retaining an optimum compromise between performance, costs and risks over the asset's life cycle, whilst avoiding adverse long-term impacts to the organization from short-term decisions
- sustainable development - enduring, balanced approach to economic activity, environmental responsibility and social progress

ISO 55001 Clauses

1. Scope
2. Normative references
3. Terms and definitions
4. Context of the organization
5. Leadership
6. Planning
7. Support
8. Operation
9. Performance evaluation
10. Improvement

4.1 Understanding of the organization and its context

- The organization shall determine external and internal issues that are relevant to its purpose and that affect its ability to achieve the intended outcomes of its asset management system.

4.2 Understanding the needs and expectations of stakeholders

- When establishing its asset management system, the organization shall determine its relevant stakeholders and their requirements (i.e. their needs and expectations whether stated, implied or obligatory)
- + PAS55 4.4.8 (legal and other requirements)

4.3 Determining the scope of the management system

- The organization shall determine the scope of the asset management system, such that the boundaries and applicability of the asset management system can be clearly communicated to relevant internal and external parties.
- + PAS55 4.4 (strategy)

4.4 Asset management system

- The organization shall, establish, implement, maintain and improve an asset management system in accordance with the requirements including the processes needed and their interactions.

5 Leadership

5.1 General

5.2 Management Commitment

5.3 Policy

5.4 Organizational roles, responsibilities
and authorities

6.1 Actions to address risks and opportunities

- The organization shall determine the risks and opportunities to assure the management system can achieve its intended outcome(s), prevent undesired effects and realize opportunities for improvement
- + PAS55 4.3.1 (asset management strategy)

6.1 Actions to address risks and opportunities

- The organization shall evaluate the need to plan actions to address these risks and opportunities, and where applicable, integrate and implement these actions into its asset management system processes and ensure information will be available to evaluate if the actions have been effective

6.1 Actions to address risks and opportunities

- + PAS55 4.4.7 (risk management), 4.4.7.1 (risk management process), 4.4.7.2 (risk management methodology), 4.4.7.3 (risk identification and assessment), 4.4.7.4 (use and maintenance of asset risk information)

Typical risks listed in PAS55

- physical failure risks, such as functional failure, incidental damage, malicious damage or terrorist action;
- operational risks, including the control of the asset, human factors and all other activities which affect its performance, condition or safety;
- natural environmental events (storm, floods, etc., including the likely effects of climate change);
- factors outside of the organization's control, such as failures in externally supplied materials and services;
- stakeholder risks, such as failure to meet regulatory performance requirements or risks to the reputation of the organization;
- risks associated with the different life cycle phases of assets

6.2 Objective and Plan

6.2 Asset management objectives and plans to achieve them
+ PAS55 4.3.2 (asset management objectives), 4.3.3 (asset management plan), 4.3.4 (contingency planning)

Typical asset performance targets

- service/supply standards;
- levels of service/supply;
- reliability, availability, maintainability;
- functionality;
- survivability;
- capacity, output quantity, output quality;
- customer satisfaction;
- safety and/or environment impact;
- legislative, regulatory or statutory compliance or a combination of the elements above.

7 Support

7.1 Resources

7.2 Competence

7.3 Awareness

7.4 Communication

7.5 Documented information

7.1 Resources

- The organization shall determine and provide the resources needed for the asset management system
- + PAS55 4.4.2 (outsourcing of asset management activities), 4.5.2 (tools, facilities and equipment), 4.4.6 (information management)

7.3 Awareness

shall be aware of:

- the asset management policy
- their contribution to the effectiveness of the asset management system, including the benefits of improved asset management performance
- the implications of not conforming with the asset management system requirements

7.4 Communication

- The organization shall determine the need for internal and external communications relevant to the asset management system
- + PAS55 4.4.4 (communication, participation and consultation)

7.5 Documented information

7.5.1 General

7.5.2 Create and update

7.5.3 Control of documented Information

8 Operation

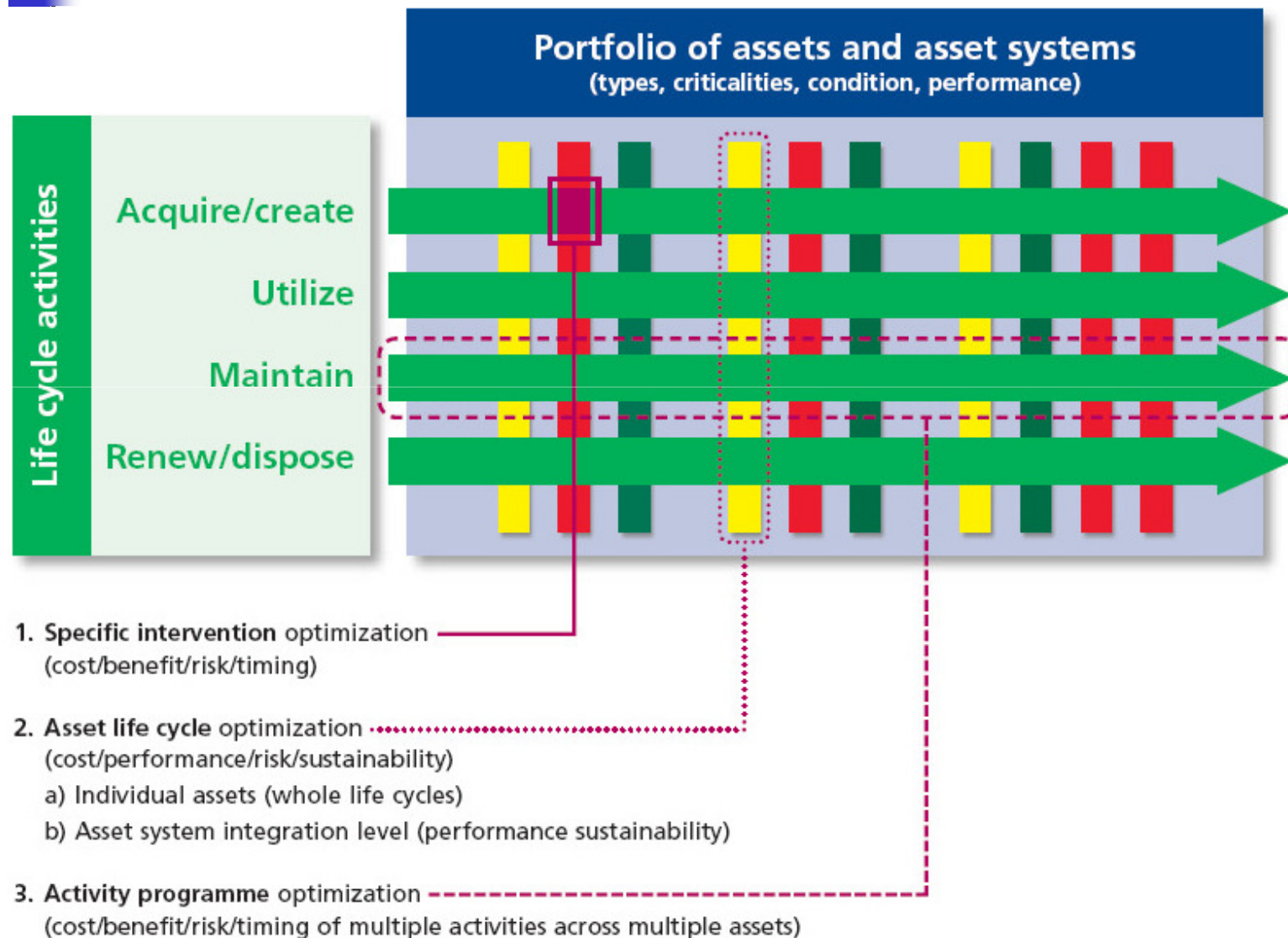
- 8.1 Operational planning and control
- + PAS55 4.5.1 (life cycle activities),
4.4.9 (management of change),

8 Operation

control of activities across the whole life cycle, including:

- creation, acquisition or enhancement of assets;
- utilization of assets;
- maintenance of assets;
- decommissioning and/or disposal of assets

8 Optimization of asset management activities



9. Performance Evaluation

- 9.1 Monitoring, measurement, analysis and evaluation
- + PAS55 4.6.1 (performance and condition monitoring), 4.6.2 (investigation of asset-related failures, incidents and nonconformities), 4.6.3 (evaluation of compliance)

9. Performance Evaluation

9.2 Internal Audit

9.3 Management Review

10. Improvement

10.1 Nonconformity and corrective action

10.2 Continual improvement

Sustainable development

links between effective asset management and long-term sustainability:

- effective management of a nation's infrastructure is an underlying component of successful economies
- asset managing organizations can have a huge impact on the environment, including the raw materials they consume or the emissions released in the construction and operation of these assets

Sustainable development

- physical infrastructure assets provide a foundation stone of societal development, delivering power and warmth, water and sanitation, and the building structures and transport links that allow society to flourish

Asset management challenges

- Do we know what (existing) assets we have, where they are, what condition they are in, what function they perform and their contribution to value? Do we know the quality of this information?
- Do we know what we want from our assets in the short, medium and long-term?
- Can our assets deliver our asset management objectives cost effectively?

Asset management challenges

- Are we getting the most value from our assets? (How could we get more value for money from them?)
- Do we have enough capability (or over capacity) in our asset portfolio? Have some assets or asset systems become redundant, underused, unprofitable or too expensive?
- Are we confident that the risks of our assets causing harm to people and the environment are tolerable and at organizational/legally accepted levels?

Asset management challenges

- Is our asset-related expenditure (capital investment and operating costs) insufficient, excessive or optimal and correctly assigned across the asset portfolio?
- Can we readily evaluate the benefits (performance, risk reduction, compliance, sustainability) of proposed work or investment and, conversely, quantify the total impact to the organization of not performing such work, not investing or delaying such actions?

Asset management challenges

- Are we allowing future problems to develop (such as performance deterioration, risks, or expenditure requirements) in our efforts to obtain short-term gains?
- Have we given due consideration to the other aspects of the organization that affect our asset management plan(s), such as people, knowledge, finance and intangible assets? Conversely, have we considered the impact of our asset management plan(s) on these other aspects?

Asset management challenges

- Do we review the appropriateness of our asset management strategy in the light of changes in the operating, regulatory and financial environment?
- Are we continually improving our asset management system performance, and realizing the benefits of the improvements? Do we know what and where improvements will be most effective?

Asset management challenges

- Does our approach to sustainable management of the assets take appropriate account of the needs of our stakeholders and are we open in our communication with these stakeholders?
- Are the working conditions, skills and wellbeing of our employees and contracted service providers given appropriate consideration?