Introductory of Asset Management – Specification for the optimized management of physical infrastructure assets: PAS 55

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Outline

- What is Asset?
- Risk
- PAS 55

What is Asset?

Assets

- General Definition:

  - Property that belongs to a person or corporation, or some other entity.

  - It is a resource that has economic value to its owner(s) and is shown on balance sheets of businesses.

  - Examples of an asset are cash, accounts receivable, inventory, real estate, and securities.

- This is a general definition and assets can be in many forms, particularly when they are bought and sold.

Categories of Assets

- Physical assets
- Human assets
- Financial assets
- Information assets
- Intangible assets

Assets, Facilities & Infrastructure

- These terms are use interchangeably, but they are different.
- **Infrastructure** is usually fixed type equipment such as pipelines, power lines, roads, wharfs, etc
- **Facilities** are built environment consisting of buildings, grounds, etc

  - Facility managers look after the conditions in the facility. E.g. air conditioning performance, cutting grass

- **Engineering Asset** is the machinery that does the work

  - The actual air conditioner or grass cutting machine that an engineer will design and maintain

Assets

- The most important aspect is the concept of economic value.
- Two type of assets:

  - Current Asset. An asset with future economic benefit expected to become available or used within the next 12 months.

  - Non-Current Asset. An asset with future economic benefit not expected to become available or used within the next 12 months.

- Both types of assets can be further divided into major and minor assets.

Betterment

- Term not often used in some processes.
- This takes place when maintenance is done to a plant that is more than replacing parts – like with like.

  - E.g. In a maintenance process parts are used that add to the value of the plant.

- The added value is then depreciated against the rest of the plant.

Risk

The common theme.

Recall

- Risk = probability x consequences
- Risk = frequency x severity
- There can be different measures for these parameters.

Risks to be Evaluated

- The type of risks to be evaluated will be determined by the situation.
- However, the following general classes of risks should enable a robust approach with a good solution.
- **Fatality.** It is probably easier to measure fatalities than other forms of harm such as sickness and injury. However, many organizations do have such information as a result of their safety programs. But, the main issue can this data be used to predict that a specific hazard is likely to result in a specific number of days lost due to illness of other injury.

Risks to be Evaluated

- **Environment.** The specific damage to the environment is difficult to determine, as some instances mat take years to be measurable. However, it is relatively easy to measure pollution, oil spills, unwanted releases, etc.
- **Property.** The cost incurred in restoring plant damaged as a result of an accident or other hazard.

Risks to be Evaluated.

• **Business.** Certain hazards or risks may only impact business operations with no other side effects or exposure of the company. An example could be the lack of change control and how this impacts on spares holdings with the resultant risk that when the part is needed it is the wrong part and cause business interruptions.

General Risk Issues

- Economic
- Legal
- Technical
- Image
- Organisational
- Survivability

Risk Parameters

- Risk = Probability of Event x Consequence of Event
- Risk = frequency x severity
- Potential Loss of Life (PLL)
- Individual Risk Per Annum (IRPA)
- Keep As Low AS Reasonably Practicable (ALARP)
- Implied Cost of Averting a Fatality (ICAF)

  - Net Annual Cost of Measure/ Reduction in Annual Fatality Rate

  - North Sea oil USD3M

  - Noewegian road transport USD0.5M

Risk

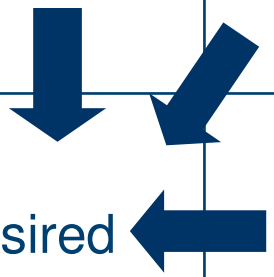
- Risk = Probability of Event x Consequence of Event
- Measured in terms of Potential Loss of Life (PLL) and Individual Risk Per Annum (IRPA)
- Keep As Low AS Reasonably Practicable (ALARP)

Risk Matrix AS/NZS 4360

	Consequences				
Likelihood	**Insignificant**	**Minor**	**Moderate**	**Major**	**Catastrophic**
Almost Certain	H	H	E	E	E
Likely	M	H	H	E	E
Moderate	L	M	H	E	E
Unlikely	L	L	M	H	E
Rare	L	L	M	H	H

Risk Assessment Quadrant

High Consequence	IV Poor	I Dangerous
Low Consequence	III Most Desired	II Satisfactory
	Low Probability	**High Probability**



Terminal Risk

- The combination of probability and consequence that if they occurred would terminate the business
- It is more than extreme – it is terminal
- It is important form a maintenance aspect to identify such risk and bring them to management for a final decision.
- This matter is often glossed over, and that is a risk in its own right.

Publicly Available Specification (PAS) 55 on Asset Management

An Introduction

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BSI Learning

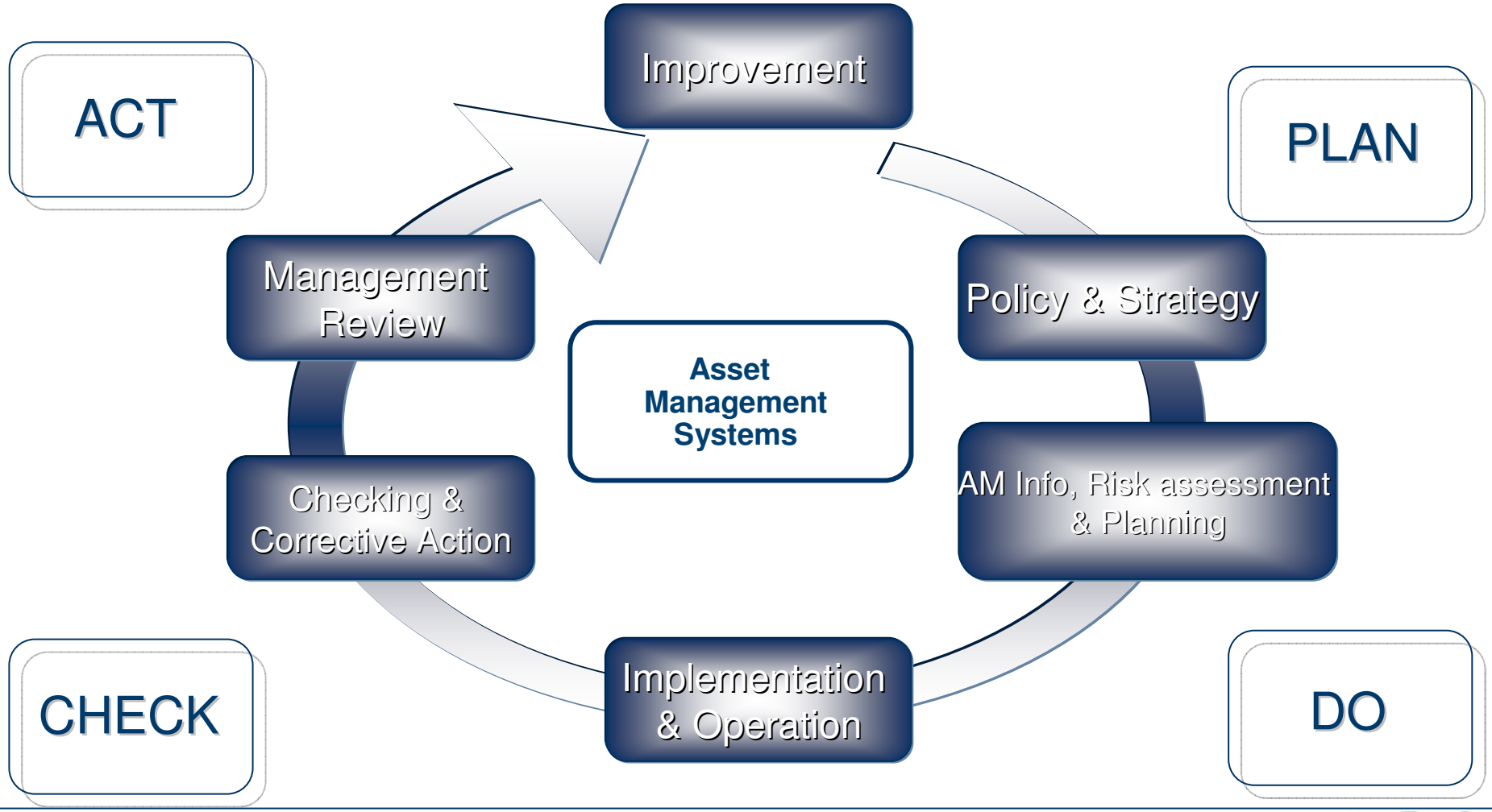
History

- Based on International Infrastructure Management Manual
- Developed by Local Government Association of Australia and New Zealand to maintain assets
- Graduate certificate course based on this manual has been developed
- PAS 55 took this very practical manual and converted into a reference document for asset management
- This work was carried out by UK Institute of Asset Management and published by British Standards

History

- PAS 55 in two parts:
  - Pt 1. Specification for the optimized management of physical infrastructure assets.
  - Pt 2. Guidelines for the application of PAS 55-1
- Developed in consultation with a large number of relevant organizations and individuals.
  - E.g. Lloyds, Register, Severn Trent Water, Halliburton, London Underground
- Being accepted and explored by a wide range of industries.

PAS 55 Model


ACT
Improvement
PLAN
Management Review
Policy & Strategy
Asset Management Systems
Checking & Corrective Action
AM Info, Risk assessment & Planning
CHECK
Implementation & Operation
DO

AM System Elements

- General Requirements
- Asset Management Policy and Strategy
- Asset Management Information, Risk Assessment and Planning
- Implementation and Operation
- Checking and Corrective Action
- Management Review and Continual Improvement

General Requirement

- The organization shall document, implement and maintain an asset management systems and shall continuously improve its effectiveness in accordance with the requirements of these elements.
- The organization shall define the scope of its asset management system.
- Outsourced processes are to be controlled to conform to these requirements.

Assets Management Policy and Strategy

- Asset management policy.

  - This is to be approved by top management

- Asset management strategy

  - Establish and maintain a long term asset management strategy

Assets Management Information, Risk Assessment and Planning

- Assets management information systems
- Risk identification, assessment and control
- Legal, regulatory, statutory and other asset management requirements
- Asset management objectives
- Asset management plans

Implementation and Operation

- Structure, authority and responsibilities for asset management
- Training, awareness and competence
- Consultation and communication
- Documentation
- Document, data and information control
- Operational control
- Emergency preparedness and response

Checking and Corrective Action

- Performance and condition measurement and monitoring
- Asset-related failures, incidents, non-conformances and corrective and preventive action
- Records and records management
- Audit

Management Review and Continual Improvement

- Reviewed by top management
- Addresses possible needs for changes to policy, strategy, objectives and other elements
- Acquisition of knowledge on new asset management technologies, tools and techniques

Conclusion

- PAS 55 is probably the best overall document currently available that describes asset management
- It does allow for adaptability for the organization and the asset.
- If you can meet all of these requirements you are in good shape.
- Being accepted by Boards as the overarching document for asset management.

BSI Training

thank you and have a safe journey home

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