What is Road Asset Management?

Wayne Hatcher   MTech(Pavements), BE(Civil)(Hons)

CMEngNZ, CAMA

Opus International Consultants

Welcome

- Health & Safety
- Mobile phones

Agenda

- Asset Management Principles & Processes   Principles

- Best Practice - ISO 55001 & IIMM   Best Practice

- Lessons learnt   Lessons

Asset Management Principles

What's are assets?

- In the context of a roads agency assets are

  - All infrastructure within the ownership and control of the agency

  - The physical items and technology systems to operate the agency's infrastructure

  - The people to manage and operate the agency's infrastructure and systems

What's an Asset – ISO55000

- An item, thing or entity that has potential or actual value to an organisation
    - The value will vary depending on the viewpoint
    - Value can be
        - Tangible or intangible
        - Financial or non-financial

- An asset has a life
    - From it's creation to it's disposal

- Individual assets are often grouped and managed collectively

Asset Management

- More than just fixing stuff

What is Asset Management?

"Coordinated activity of an *organisation* to
realise value from *assets."*

ISO 55001

Key infrastructure Asset Management concepts

- *Sustainable* – *for current and future generation*
- *Consider full* **lifecycle**
- *Optimise* *level of service, risk and cost*
- *Continual* **improvement**

Asset Management

- is……

- Knowing what asset service outcomes are required to contribute to the organisations objectives.

- Having a detailed understanding of the life cycle and performance (service & risk), of all the assets.

- Coordinating activities and practices to optimise delivery (maximise service, minimise risk and minimise cost).

Value from Asset Management

Improved financial performance

Informed asset investment decisions

Managed risk

Improved services and outputs

Demonstrate social responsibility and compliance

Improved organizational sustainability

Enhanced reputation

More certainty for investments/budgets

Maintenance Management versus Asset Management

Maintenance Management: Assets → Budget → Treatment → LOS

Service Management: LOS → Assets → Treatment → Budget (loop back)

Organisation Management: Organisational Objectives → LOS → Assets → Treatment → Budget (loop back)
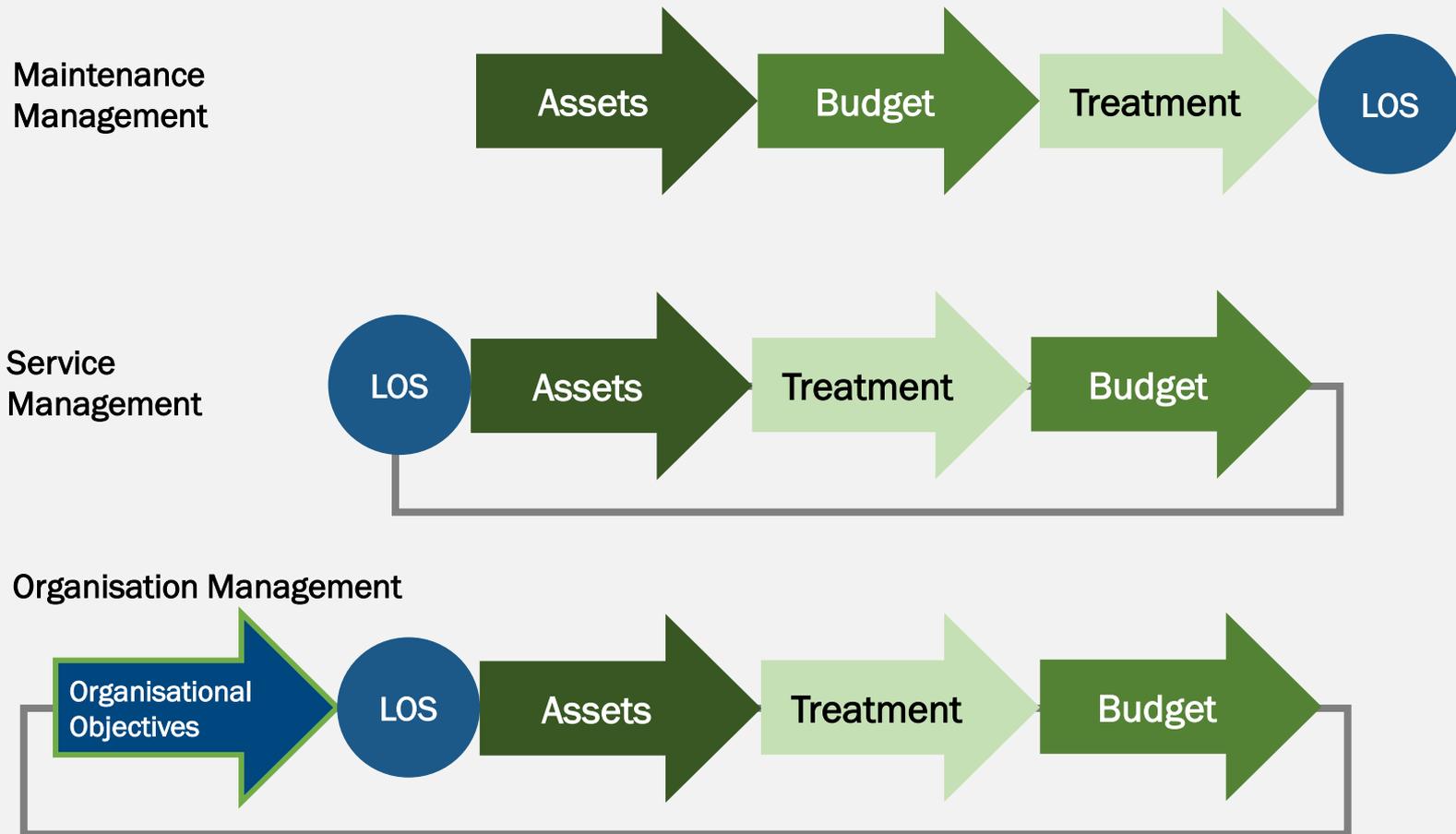
Source: Travis Gilbertson, Opus International Consultants

What differentiates an Asset Manager?

- **Maintenance Manager** = Find faults and fixes as many as they can within the budget available

- **Asset Manager** = delivers organisational objectives using assets considering
  - Sustainability
  - Whole of life cost
  - Optimising risk, outcome and Investment
  - Continual improvement opportunities

Asset Management is a business model


It's all about getting the right balance

Organisational context

TOP MANAGEMENT

ORGANISATIONAL OBJECTIVES

Business outcomes
Business sustainability

BUSINESS PLAN

Business strategies
Asset management policy
Level of service requirements

FUNCTIONAL SERVICES

HRMS, FMS, ITS, QMS, RMS, etc.

WHOLE OF LIFE ASSET MANAGEMENT

DISPOSAL

Retirement
Renewal (replace/refurbish)
Residual value
Redeployment

PLANNING

Assess asset related business needs
Identify options (asset / non-asset)
Option analysis
Plan agreed

ASSET DEVELOPMENT

DESIGN

Assess asset related business needs
Identify options (asset / non-asset)
Option analysis
Plan agreed

Asset Outcome Review and Monitoring

OPERATIONS / MAINTENANCE

Condition / performance / risk
Forward works program / valuation

ACQUISITION

New assets
Asset commissioning
Asset register
Asset management system

CONSTRUCTION

New assets
Asset commissioning
Asset register
Asset management system

Asset Management pyramid

Community Outcomes

Asset Outcomes

Service Levels

Intervention Levels

Work Instructions

Physical work

Vertical Integration
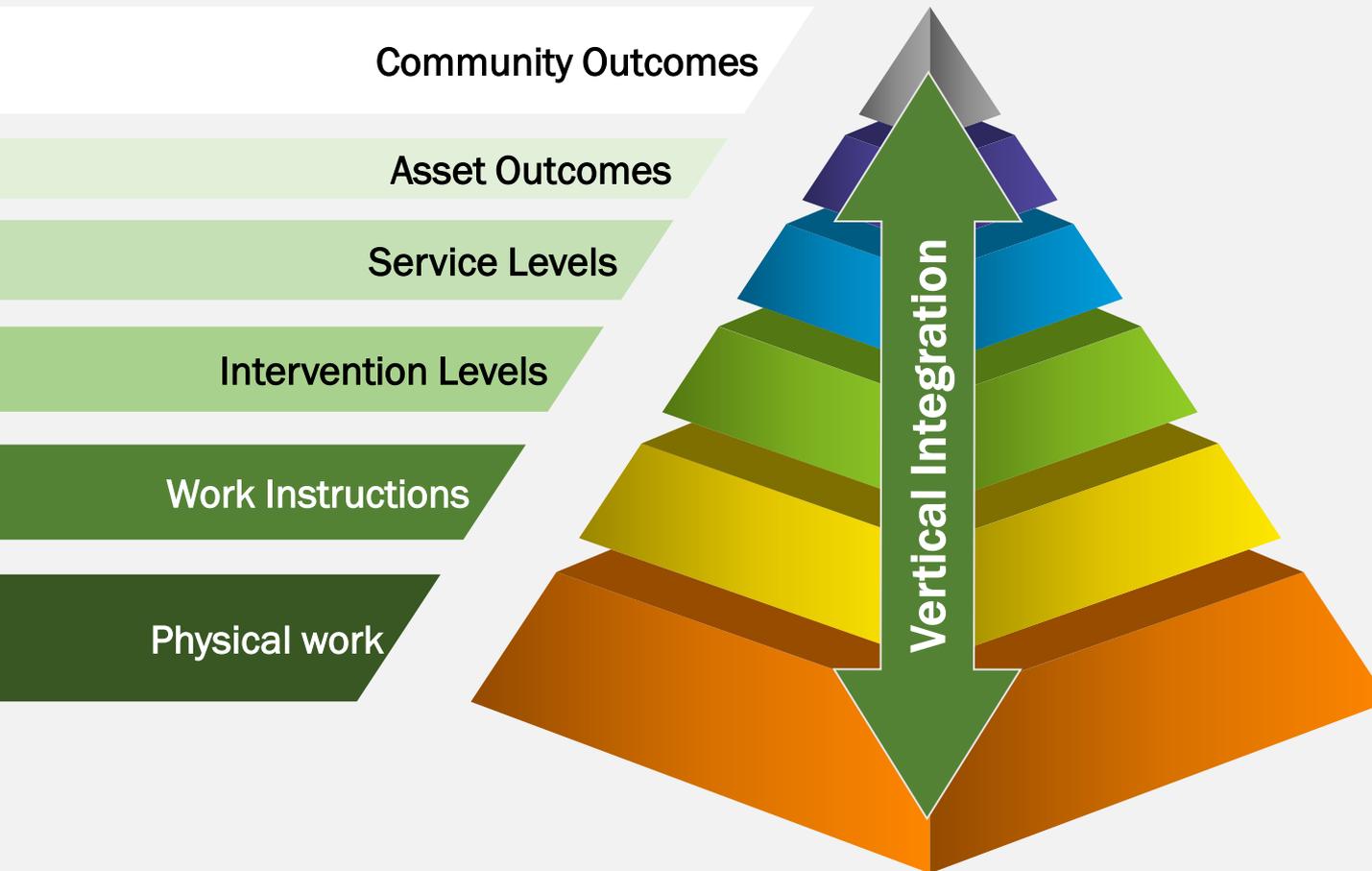
Source Tony Porter Opus International Consultants

Roles in the delivery of Asset Management

Doing things right

Doing the right thing

Setting the right objectives

Efficiency

Effectiveness

Efficacy

Implementation

Management

Governance

Operational

Tactical

Strategic

Physical Work	Work Instructions	Intervention Levels	Levels of Service	Asset Outcomes	Community Outcomes
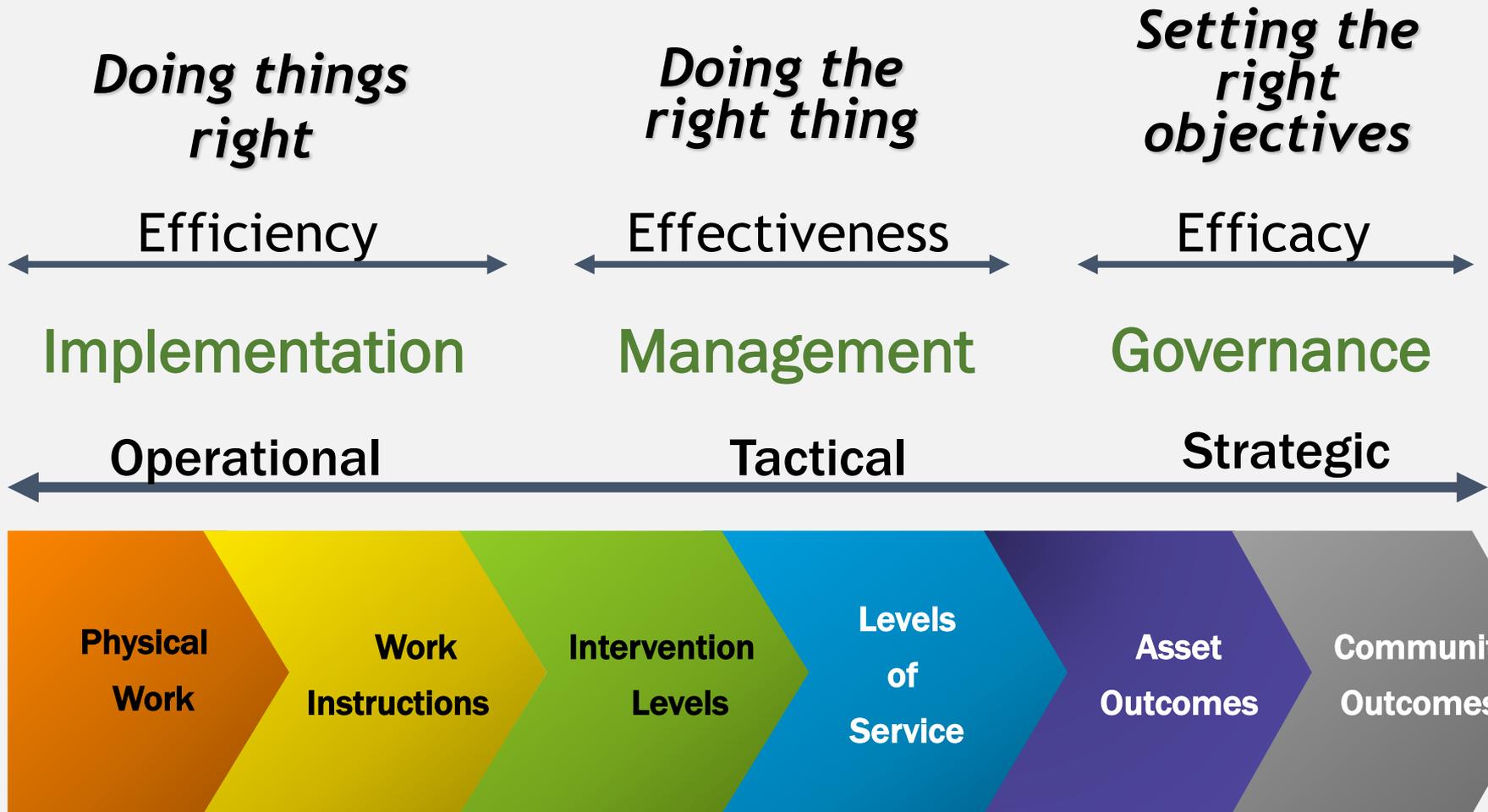
Source Tony Porter Opus International Consultants

Asset Management saves up to 30%

Overall Benefit from Asset Management
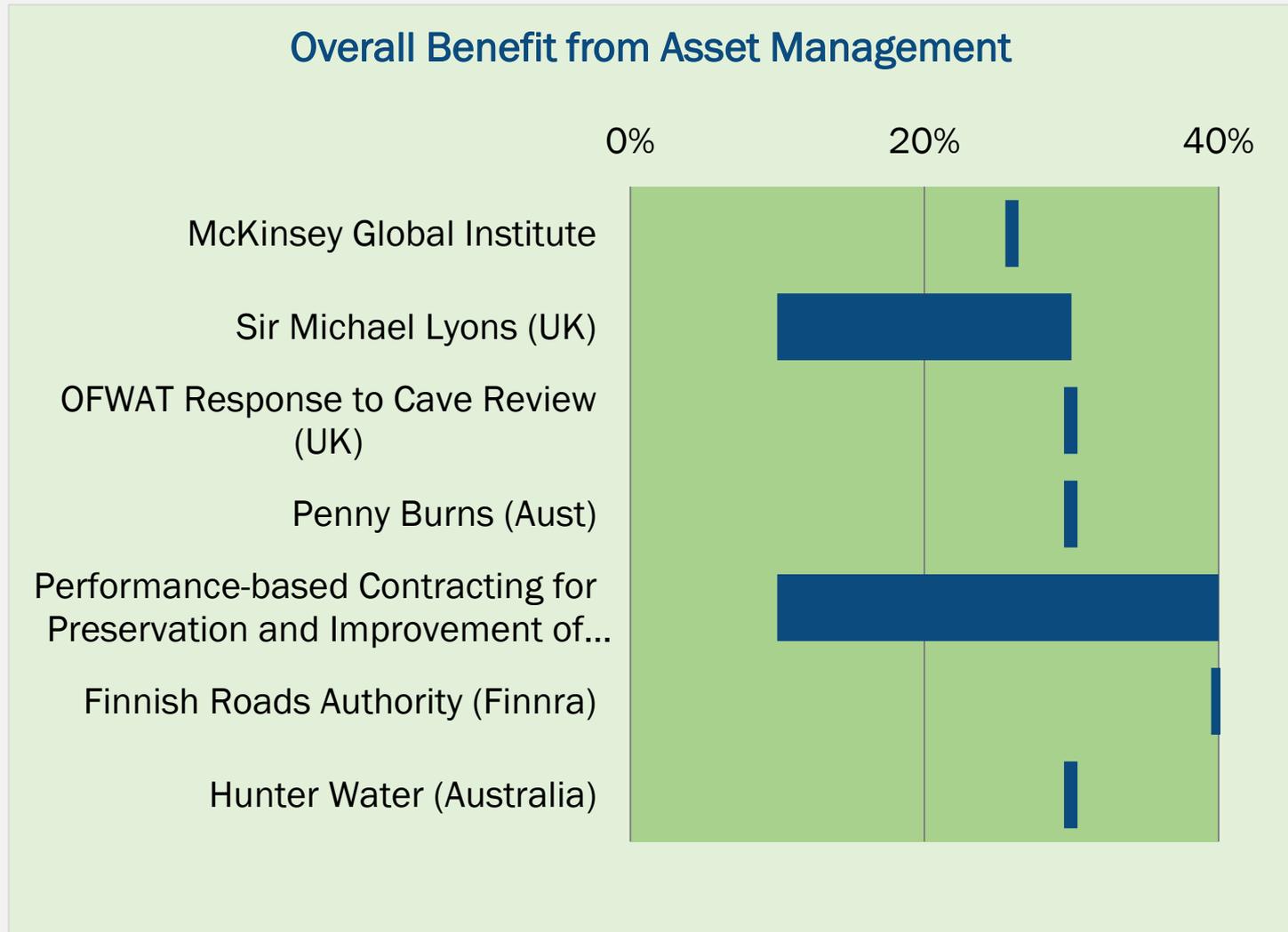
Guiding Principles

- Assets only exist for the services that they provide

- Enough is enough
  - More is not necessarily better

- Assets must be managed for today AND for tomorrow

- AM is all about trade-offs
  - Every decision we make - whether to acquire an asset or not acquire it, to renew or discard, to maintain or not maintain – is implicitly a trade-off

- Use of data for evidence based decisions

Asset Management Best Practice

ISO 5500X Standards

- ISO 55000 – overview of asset management and asset management systems and sets the context (framework)

- ISO 55001 – specifies the requirements for a management system for asset management (compliance)

- ISO 55002 – guidance for the application of an asset management system in accordance with the requirements of ISO 55001 (application guide)

Structure of ISO 55001 Requirements 24 Elements

4   Context of organization

4.1   Understanding organization and its context

4.2   Understanding the needs and expectation of stakeholders

4.3   Determining AMS scope

5   Leadership

5.1   Leadership and commitment

5.2   Policy

5.3   Organizational roles, responsibilities and authorities

6   Planning

6.1   Actions to address risks and opportunities for AMS

6.2   Asset management objectives and planning to achieve them

9   Performance evaluation

9.1   Monitoring, measurement, analysis and evaluation

9.2   Internal audit

9.3   Management review

8   Operation

8.1   Operational planning and   control

8.2   Management of change

8.3   Outsourcing

7   Support

7.1   Resources

7.2   Competence

7.3   Awareness

7.4   Communication

7.5   Information requirements

7.6   Documented information

10   Improvement

10.1 Nonconformity and corrective action

10.2 Preventive action

10.3 Continual improvement

ISO 55001 requirements

1 Standard, 7 Sections, 160+ Requirements

- 4 - Organisational Context
- 5 - Leadership
- 6 - Planning
- 7 - Support
- 8 - Operation
- 9 - Performance Evaluation
- 10 - Improvement
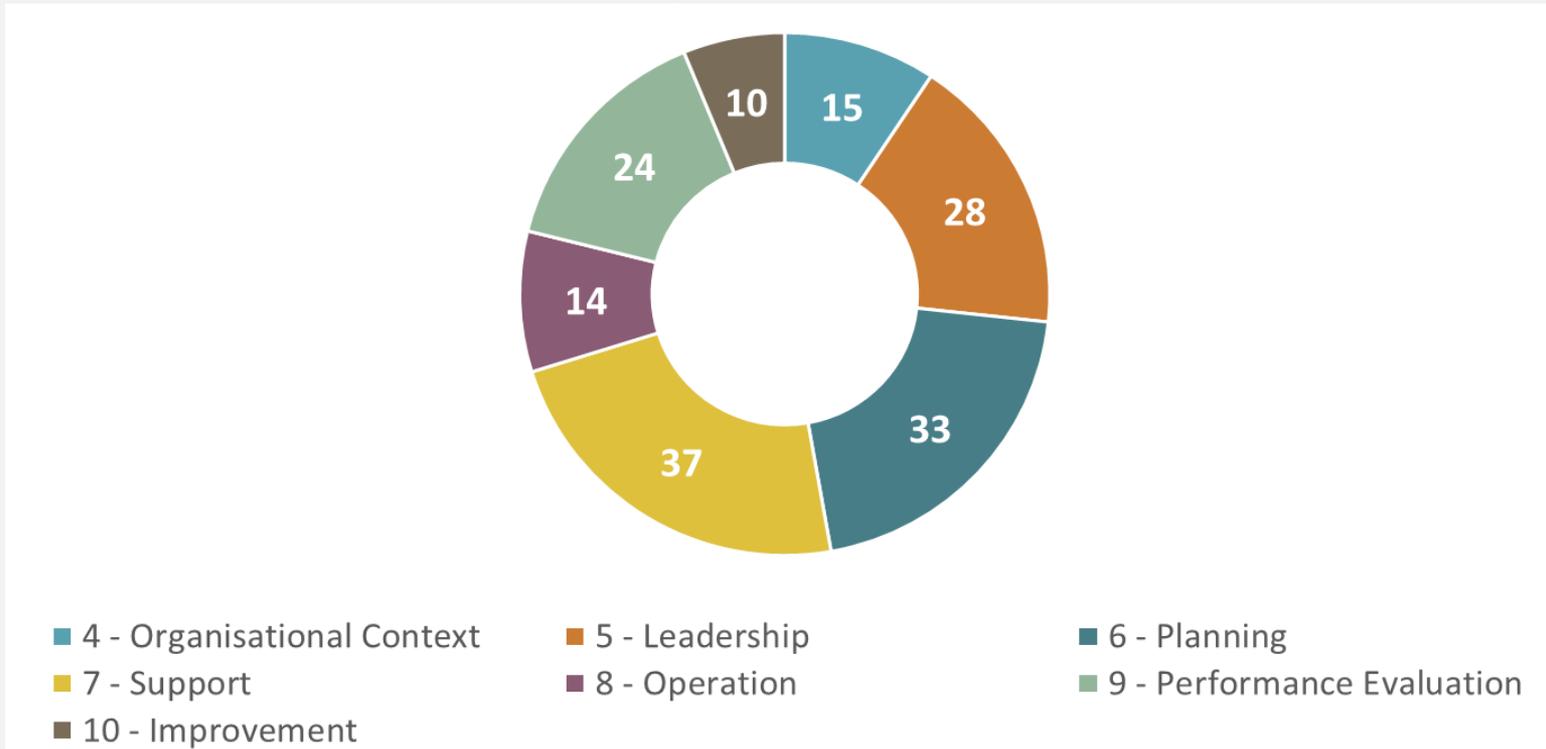
ISO55000 & ISO9000 drive continual improvement

Continual improvement of the QMS

Information

Customers

Requirements
(clause 4)

Management Responsibility
(clause 5)

Resource Management
(clause 6)

Measurement, analysis and improvement
(clause 8)

Product Realization
(clause 7)

Customers

Satisfaction
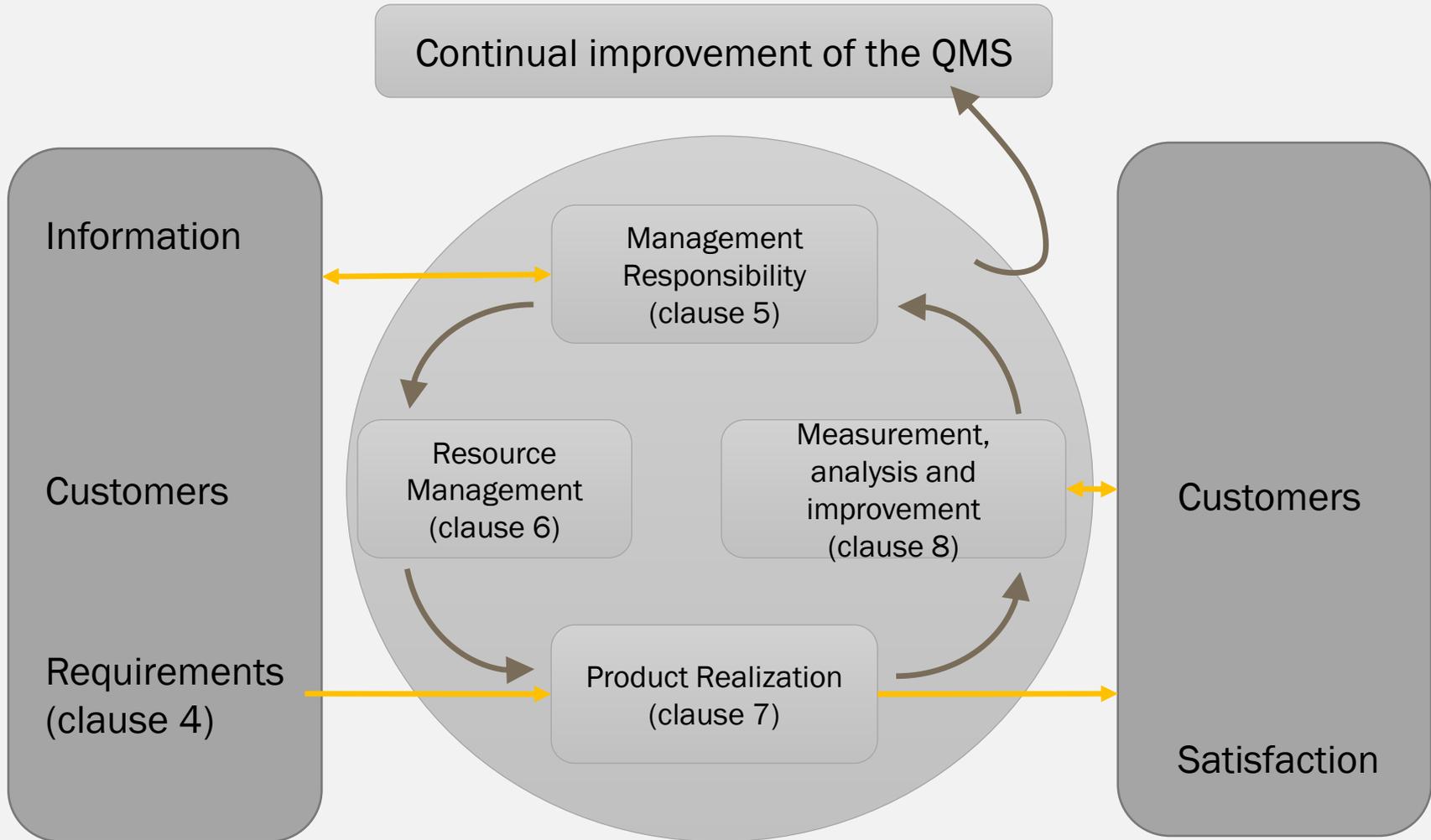
NAMS Manuals

- NAM's manuals
  - Available from IPWEA website
  - NAMS = National Asset Management Steering Group
  - IPWEA = Institution of Public Works Engineers Australasia
    - i.e. Australia and New Zealand

Asset Management System

MANAGING THE ORGANISATION
(Organisation's Objectives)

ASSET MANAGEMENT
(Asset Management Objectives)

ASSET MANAGEMENT SYSTEM

ASSET PORTFOLIO

ORGANISATIONAL OBJECTIVES

ASSET OUTCOMES

Decision Making

Performance | Cost | Risk

Asset Management Service Levels

People | Processes | Technology

Asset Management Enablers

Assets | Funding | Works
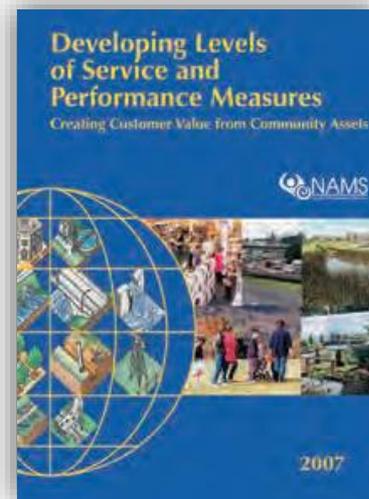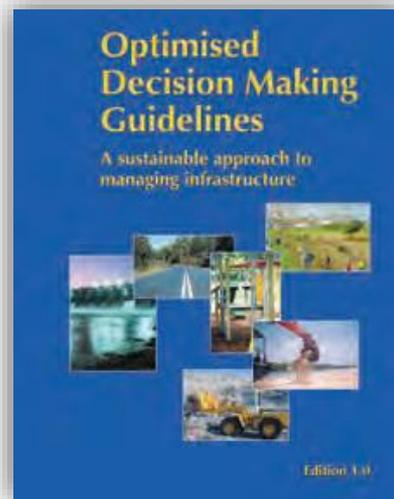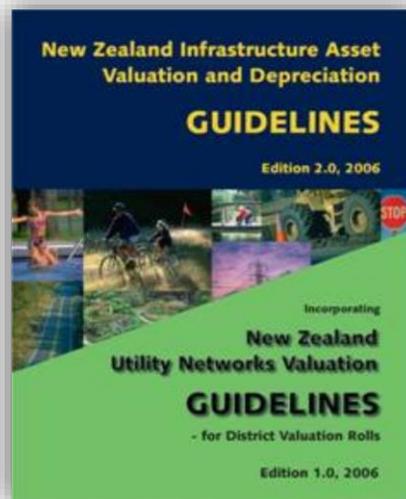
Asset Management Resources

Asset Management Policy Asset Management Strategy, Objectives and Plans

Asset Management Enablers and Controls

Implementation of Asset Management Plans

Performance Assessment and Improvement Management Review

This diagram is sourced from Opus International Consultants

Asset Management building blocks

VALUE

End user / Customer satisfaction
Social benefit
Financial return

ALIGNMENT

Business objectives
People / processes / outcomes
Level of service definition / achievement
Asset management culture

ISO 55001 Fundamentals

LEADERSHIP

Governance
Asset management policy / strategy
Roles / responsibilities
Provision of Resources

ASSURANCE

Performance monitoring / actions
Forecasting future condition / costs
Risk management
Reliability / robustness

Source Travis Gilbertson Opus International Consultants

Asset Management System

Organisation Objectives

Stakeholders /Customers

Functional Services

Operations and Physical Works

Group Discussion
Understanding organizations and their context

- What are the key issues affecting the organisations you work with?

Hierarchy of management approaches (ISO 55002)

Strategy

Organizational Objectives

Organizational Plan

Asset Management Policy

Strategic Asset Management Plan (SAMP)

Asset Management Objectives

Asset Management Plans (AMP)

Asset Management Activities to implement Plans

Organizational Objectives

Asset Management Policy

Levels of Service & Intervention Levels

Maintenance Strategy

Asset Management Strategy

Maintenance Objectives

Asset Management Objectives

Maintenance Plans

Asset Management Plan

Work Plans

Work Plan

Maintenance Activities

Work Activities

Asset Management Policy

- Top management shall establish an AM Policy that
  - Is appropriate to the purpose of the organization
  - Provides a framework for setting AM objectives
  - Includes a commitment to satisfy applicable requirements
  - Includes a commitment to continual improvement of the AMS

Policy
Intentions and direction of an organization as formally expressed by its top management ISO 55000 (3.1.19)

Asset Management

- Managing infrastructure to deliver a defined level of service over a defined period of time
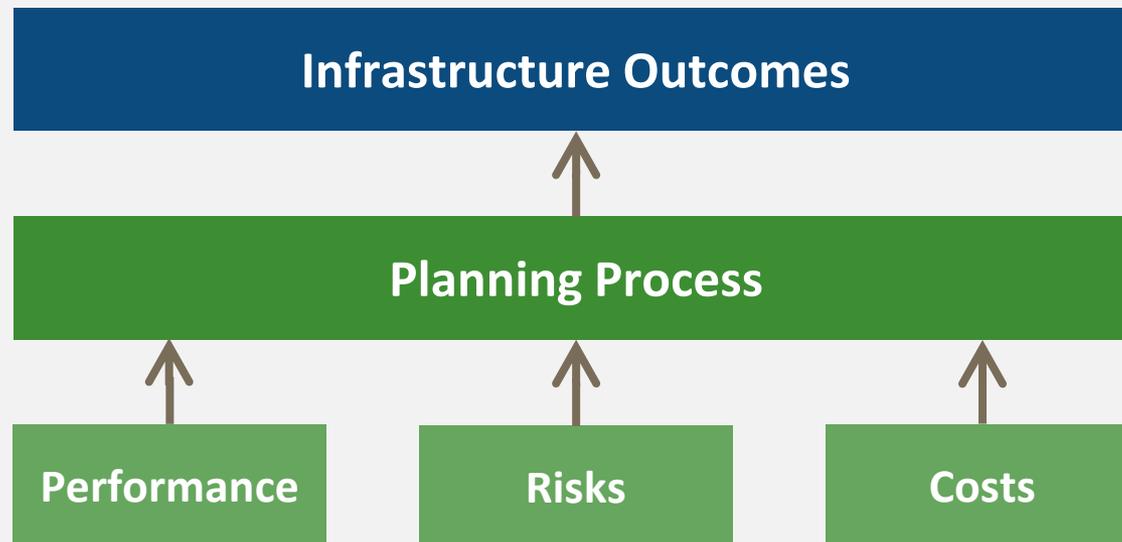
Summary - Asset Management is....

- About understanding the organisation

- Delivering services from infrastructure

- Outcome focused

- Proactive rather than reactive

- About asset lifecycle management

- Focused on delivering value

- Not just about software
    - Asset Management System = people + process + technology

- Overall AM is an organisational process, a system.

Lessons Learned

Where it starts...

- Maori Proverb
  - He aha te mea nui
    - He tangata
    - He tangata
    - He tangata

- English translation
  - If you asked me what is the mos important thing in the world?
  - I would reply
    - It is people
    - It is people
    - It is people

Where it starts...

People, people, people

- Assign roles and responsibilities

- Create a positive Asset Management culture

Leadership

Requires strong leadership

- Visionary
- Sets direction
- Empower
- Energise
- Reward
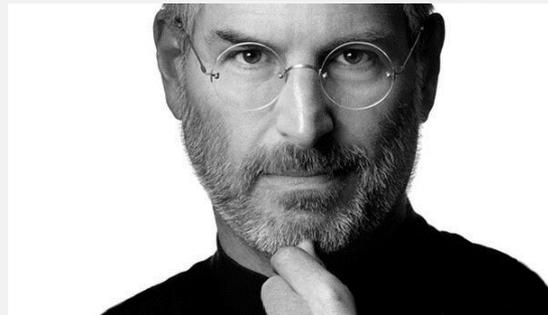
Starting out

A good game plan

- Vision

- Pragmatic

- Achievable

- Early wins

- Long term goals

Continuous Improvement

Summit (29,028 ft)
Lhotse (27,923 ft)
North Face
Camp IV (26,000 ft)
Geneva Spur
Camp III (24,500 ft)
South Face
Nuptse (25,850 ft)
Camp II (21,300 ft)
Lho La
Camp I (19,900 ft)
Khumbu Icefall
Base Camp (17,700 ft)
Khumbu Glacier
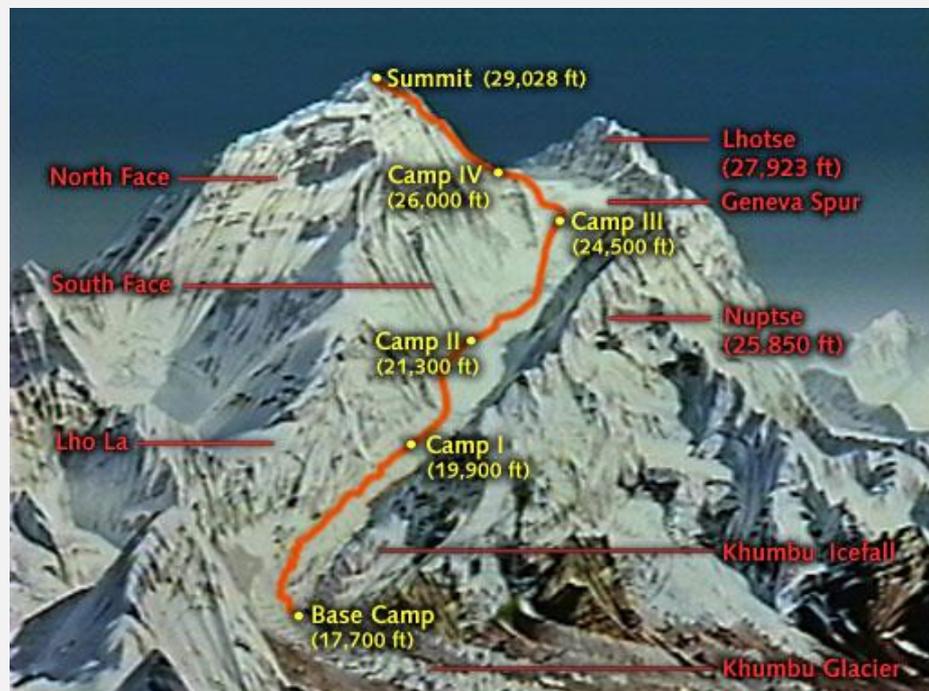
Starting out

Manageable chunks

- Incremental

- Achievable

- Systematic

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Learn from Others

Building on best practices

- Asset Management is a well understood science

- Leaders - New Zealand, Australia

- Leverage experiences of others

- Challenges are global

- No need to reinvent the wheel
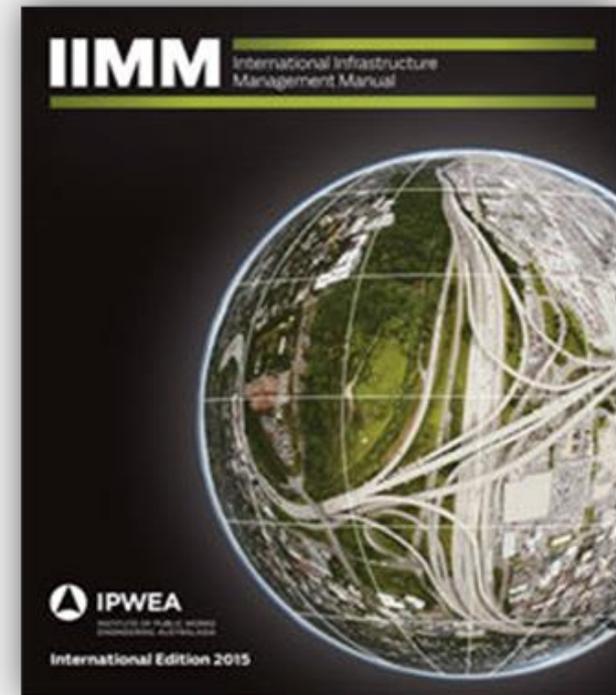
Stewardship

It's about good stewardship

Doing the right thing

At the right place

At the right time
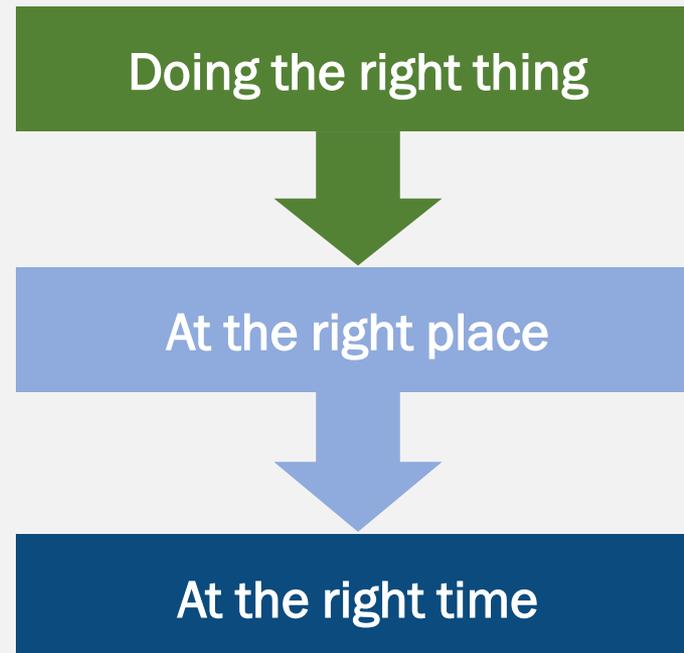
Varying approaches

One size does not fit all

- Implementing advanced asset management requires ability to understand an agency's existing business environment and incorporating solutions that will work

Thank you

Questions

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