Asset Management 2001

Australian Procurement &
Construction Council Inc

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INTRODUCTION

Collectively the Commonwealth, State and Territory governments are the largest owners of built assets in Australia.

The replacement value of government assets is in the order of $371 billion and each year the public sector spends some $18 billion in capital and maintenance funds on its assets[1] to support the delivery of government services to the community.

Managing this significant commitment of budgetary resources requires a carefully planned strategic approach to enable government to meet community needs, provide and sustain public assets and achieve stated service outcomes.

Effective asset management provides governments with strategies to enhance service delivery, achieve value for money and minimise risk.

The initial APCC guide ***Total Asset Management*** was issued in 1996 to assist governments develop sound asset management practices. Since that time there has been significant progress in all jurisdictions, and developments including better asset management practices.

This updated guide ***Asset Management*** promotes best practice and equips governments with new approaches to strengthen their responses to the changing needs and priorities of the community. It should assist in managing demand as well as setting priorities and ensuring on-going asset sustainability.

It places a specific focus on strategic planning and on exploration of alternative solutions before making a commitment to, on the one hand, new assets or, on the other hand, retention of existing assets. In the past most agencies tended to deliver services in isolation from other government agencies and the private sector, and were in competition for limited resources and market share. This competitive environment limited opportunities to provide and sustain the required level of services to the community and overlooked opportunities for cooperation and sharing.

The approach is to integrate asset planning into a broader planning framework of policies, priorities, resource management and output budgeting at a whole-of-government level. This enables a broader range of options to be considered, whole of life costs to be identified from the outset. It places the focus on service delivery outcomes and outputs.

While the general principles are applicable to all, agencies are expected to adapt these guidelines to meet the specific requirements of their jurisdictions.

[1] Australian Bureau of Statistics publication “Government Financial Estimates 1999–2000” No 5501.1 of 30 April 2000

PRINCIPLES OF ASSET MANAGEMENT

The following set of principles has been developed to enable asset management to be integrated into the mainstream of government and agency business planning:

- Assets should exist to support service delivery.
- The responsibility for asset management decisions should reside with the agencies that control the assets.
- The full cost of providing, operating and maintaining assets should be reflected in agency budgets.
- Agencies should report on the usage, maintenance and overall performance of their assets.
- Asset management within agencies must be consistent with whole-of-government policy frameworks.
- The strategic planning and management of assets are key corporate activities, to be considered along with the strategic planning for other resources such as Human Resources and Information Technology.
- Before deciding to acquire new assets, agencies must consider all relevant factors including non-asset solutions, full life cycle costing, risk analysis and the better use of existing assets.
- Asset management decisions should meet the needs of the present without compromising the needs of future generations.
- Agencies should preserve our heritage, cultural and environmental values.

BENEFITS OF A STRATEGIC APPROACH

The scale of government investment in built assets and infrastructure exposes governments to considerable political, managerial and financial risks. A strategic approach to asset management allows governments to better manage these risks, as well as to obtain better value for money in the delivery of services to the community.

The benefits of such a strategic approach are as follows:

- Better allocation of limited government resources.
- Improved alignment of assets with services and community expectations.
- Reduced demand for new assets through better integration of service and asset planning.
- More effective use and maintenance of existing assets.
- Opportunities to share government, private and community assets.
- Increased opportunities for partnering with the private sector.
- Wider consideration of the use of non-asset solutions to meet service demand.
- Greater use of sustainable development solutions to enhance cultural, heritage and environmental outcomes.
- Realisation of a return from surplus assets.
- Improved processes and accountability for capital and recurrent works.

ASSET MANAGEMENT IN GOVERNMENT TODAY

Governments operate in dynamic environments in which new issues are constantly emerging. In the past five years asset management has been influenced by the emergence of new issues, particularly:

- budgeting for output and performance;
- requiring identification of whole-of-life costs from the outset; and
- questioning whether governments need to use assets as they have in the past to deliver government services to the community and questioning who should own the required assets.

There are also other issues that are becoming critical and need to be addressed systematically and thoroughly. These include:

- sustainable development;
- asset sustainability as a consequence of ageing assets;
- technological change and its impact on the type, range and life of assets; and
- the short life of integrated technology, requiring planned upgrading and replacement strategies.

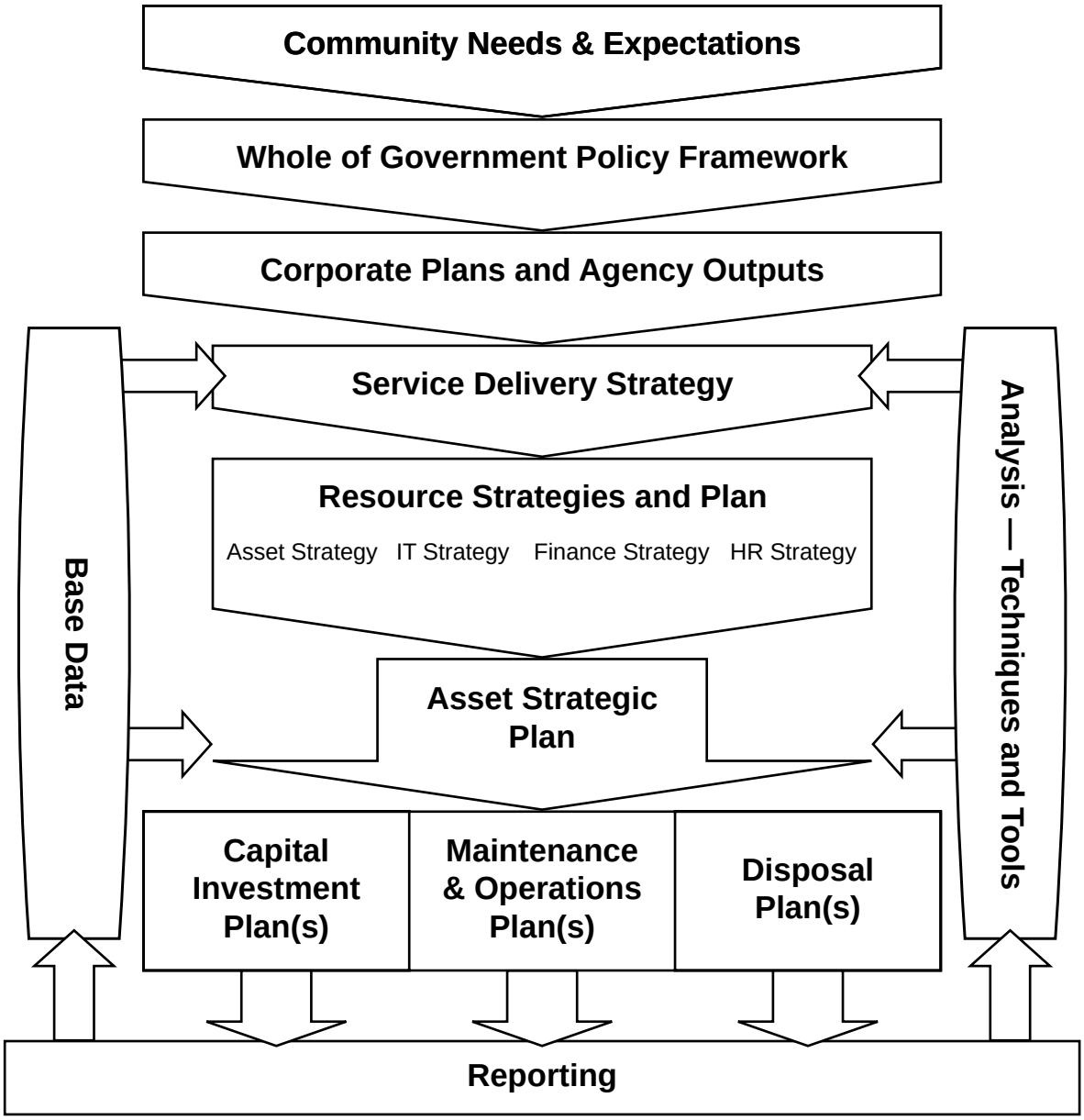
These and other similar issues are changing the ways in which governments conduct their business, allocate their budgets, deliver services and manage assets.

To enable governments to respond effectively to the dynamic environments in which they operate the concept of asset management has been integrated into the broader framework of government planning. In this context assets are seen as one of a number of resources supporting service delivery.

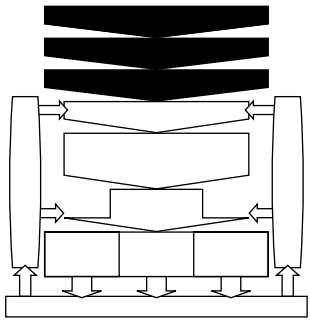
AN INTEGRATED PLANNING FRAMEWORK

The framework outlined below reflects the processes which the government and its agencies use to plan activities and services, to allocate resources, and to monitor and report on performance. The following pages step through all of the integrated planning elements from Community Needs and Expectations and Government Outcomes to the reporting required from the development assets plans. These pages identify the influences that can act on the strategy and planning processes including the interactive requirements of Information Technology, Human Resources and Financial Management.

The process is cumulative and links together all stages of asset management and policy development. This process strives to ensure that the needs and expectations of the community are met in a responsible and sustainable manner.



Community Needs and Expectations



The community's needs and expectations of government are becoming more sophisticated and complex. These expectations are manifested by demands for better quality, value for money, environmental awareness, innovative solutions, and relevant value-adding services.

A clear definition of the community's needs and expectations is required to ensure that asset plans accurately reflect both the quantity and quality of assets required to satisfy the community's needs for the delivery of services.

Governments' capacity to commit to expenditure is limited by fiscal policy and prudent management while the demand for services is unlimited. It is therefore necessary to prioritise decisions on what services will be delivered and in turn what resources should be made available to deliver those services.

Whole of Government Policy Framework

Governments translate community needs and expectations into services that will be delivered by use of a policy framework including components such as:

- legislation;
- government policies, priorities and strategies; and
- fiscal strategies.

Government policy determines the direction that agencies will take and is expressed through corporate plans and agency output statements.

Corporate Plans and Agency Outputs

Agency corporate plans and output statements give broad outlines of the goals an organisation plans to undertake, either by itself or in conjunction with others, to achieve the governments' outcomes.

These plans and statements direct the detailed service and resource planning by the agency.

In recent years policy development and asset management have been influenced by the emergence of new issues, in particular output budgeting and sustainable development.

Output Budgeting

Output budgeting is the process of agreeing the range and amount of outputs an agency will deliver and the cost in terms of the levels of resources that will be required to provide them.

Service/Resources agreements between agencies and Treasuries are being formally established in several jurisdictions. These agreements require agencies to take responsibility for providing agreed services within a budget and encourage government to nominate those services that provide greatest benefits.

Output budgeting requires agencies to identify the real cost of providing each aspect of its services by knowing the costs of all its resources. It requires a level of planning sophistication that enables governments to determine the range of service outcomes that best meet particular needs and support the overall community, within the resources available. Short term planning is no longer adequate. Agencies must now adopt a long term approach to predicting and planning

for service requirements well into the future. Accordingly, all costs including Human Resources (HR), Information Technology (IT) and Assets must be identified to fully appreciate the cost of an agency's output. Asset costs that should be considered are detailed at Appendix 1.

Sustainable Development

Sustainable development is a key influence on policy development and strategy considerations. It is important that agencies consider sustainable development issues when developing policies and strategies.

Sustainable development refers to development that meets the needs of the present without endangering the needs of future generations. It addresses potential conflict between, on the one hand, preserving and enhancing the environment and, on the other hand, the impact of development.

Sustainable development has four primary objectives:

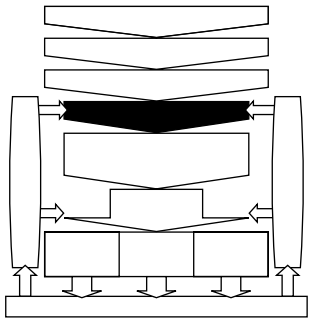
- minimised risk of environmental damage arising from incomplete knowledge;
- ecological sustainability;
- socio/cultural sustainability; and
- economic sustainability.

Any action that promotes one of these objectives in a way that undermines the long term net viability of another is not sustainable development.

An agency's service delivery and asset management should contribute to sustainable development.

Organisations should identify potential ecological socio/cultural and economic impacts of activities through impact assessments and economic appraisals. They should then develop and implement strategies to overcome such impacts.

Service Delivery Strategy



A Service Delivery Strategy translates the broad aims of an agency into specific service outcomes it plans to deliver and outlines the strategy that will be adopted. It also provides the initial indication of the resources that will be required to deliver the service.

A single agency or business unit is rarely able to provide a service in complete isolation from other areas of government. When developing the service delivery strategy, consideration must be given to the many intra and inter-government links that exist between agencies and the services that they deliver. Agencies need to adopt effective strategies for planning and cooperation both within and between agencies. This is to ensure that the delivery of services is seamless and that outcomes for the community are maximised by the efficient use of limited resources.

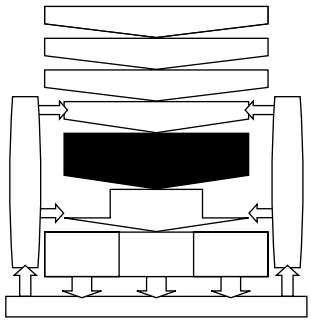
Service delivery planning entails the development of strategies that focus on particular outcomes, defining each aspect of the services to be provided and setting appropriate limits.

It encourages options for service delivery to be examined within prevailing resource constraints. It supports finding creative solutions that offer the highest value to government and the community for the most efficient and effective resource use.

This is achieved by:

- planning between agencies to ensure seamless and complementary delivery of all government services;
- ensuring overall strategic direction is aligned with Government policy and budgetary priorities;
- reviewing and challenging accepted organisational assumptions about service delivery;
- looking at future service configurations and considering mid to long term issues which will have an impact on service demand and supply;
- examining service delivery options and identifying opportunities provided by technology and by cooperative service delivery which will achieve service outcome targets in the most efficient and effective manner for the community;
- utilising the techniques of demand management, economic appraisal, value management and risk management in evaluating service delivery options; and
- determining indicative resource allocations to achieve the most efficient and effective delivery of services.

Resource Strategies and Plans



The resources that agencies use to deliver their programs are: finance, human resources (HR) information technology (IT), and assets. Frequently within agencies, separate groups have responsibility for each of these resources. Only by an integrated approach to the development of strategies for the planning and management of each resource can agencies deliver quality services efficiently and effectively.

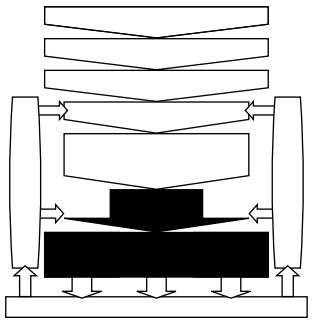
Resource Groups' plans reflect and translate Government policy (and customer needs) into broad program and service strategies and priorities.

Assets require the development of a management plan that must include consideration of the various stages of the life cycle of assets, that is, acquisition, utilisation and divestment. Consequently, asset plans normally comprise three component plans as follows:

- Capital Investment Plan;
- Maintenance and Operations Plan; and
- Disposal Plan

Implementation of the component asset plans supports the delivery of services to the community.

Asset Strategic Plan



The asset strategic plan is the means by which an agency matches its asset portfolio to its service delivery requirements. It defines the strategic actions it plans to implement to ensure assets best meet service delivery requirements. The asset strategy is part of a wider resource strategy.

Asset planning balances the service delivery potential and cost of existing assets against the cost of other resources required to achieve agency service objectives, timeframes and budgets.

Strategies for the management of individual assets and portfolios should be based on defined service delivery objectives. The agency's own principles for whole-of-life management of the assets should then be reflected into these objectives. Agencies need to set a range of appropriate standards for the use, operation and maintenance of assets to ensure existing assets successfully support service delivery needs.

The following key issues need to be considered in developing an asset strategic plan:

- **Asset Utilisation (capacity vs actual usage):** Are assets fully used in service delivery?
- **Asset Capacity:** Have the assets sufficient capacity to provide the required services?
- Asset Functionality / Condition (required condition vs actual condition): Are assets in a suitable form and condition for the optimal delivery of the services they are intended to support?
- **Asset Costs (budget vs actual expenditure):** How do the costs of operating and maintaining assets relate to budgets and the total costs and/or price of service delivery?
- **Asset Values (replacement cost vs depreciated value):** Are asset values (Depreciated Value and Replacement Cost) commensurate with service delivery requirements?
- **Asset Location:** Are assets appropriately located for effective service delivery?
- **Asset/Service Dependency:** Can the service delivery be provided more effectively through the use of resources other than assets?
- **Asset Procurement:** Should the asset be:
  - owned by Government?
  - leased by Government from the Private Sector? or
  - provided by other means, nominally the use of Build Own Operate (BOO) or Build Own Operate Transfer (BOOT) schemes?

Implicit in examining these issues is the need to examine whether services can be more cost-effectively provided either by adjustments to the asset portfolio or by changing the way in which services are delivered to make better use of the assets already available. A technique for measuring the performance of assets and integrating this information to determine the impact that assets have on the cost of service delivery is included as Appendix 2 — Examples of Techniques.

The asset strategy results in action plans. These plans should be developed and documented at the portfolio level and, where appropriate, at the asset level. The action plans are the action plans relating to the various stages of an asset's life cycle.

Capital Investment Plan

The Capital Investment Plan details the new assets or the major changes to its existing portfolio that an agency requires to support its service delivery. This plan should address the following factors:

- flexible, long-term service delivery requirements;
- demographic trends;
- periodic refurbishment;
- whole of life costs and the impact on future budgets;
- government priorities; and
- risks of change to service delivery requirements.

Maintenance and Operations Plan

Agencies must ensure existing assets sustain service delivery and are appropriately maintained, operated and fully utilised.

Through asset management, agencies should plan and undertake maintenance and operational programs for all assets. Assets should be retained in, or restored to, conditions that are specified to support service delivery. Maintenance and operational plans need to be aligned with investment and disposal plans and properly accounted for in agency budgets.

Expenditure on unplanned maintenance should be compared against expenditure on planned maintenance. A budget should be determined to ensure that assets are maintained in a cost-effective manner with minimum disruption to the occupants or the delivery of services.

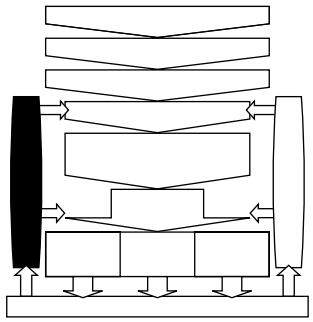
Disposal Plan

Asset management encourages agencies to develop contingency plans for asset disposal.

Agencies should be flexible and innovative when considering the future uses for under-utilised or under-performing assets. Joint agency planning can provide opportunities for multiple agency use of under-used or under-performing assets rather than requiring their closure.

However, disposal of assets can release capital for other uses, and government may offer incentives to individual agencies to dispose of surplus capital stock, or to relocate when the value of the asset is greater when used for other purposes.

Base Data



Base data is fundamental to the establishment of an asset strategy.

Data should include the following information:

- **Asset Characteristics**

  A basic asset register should include information such as asset descriptions, age and location information including property title details.

- **Asset Categorisation**

  Categorisation helps in comparative analysis and in determining strategic options. Within the asset register, categorisation is useful to organise assets for analysis or reporting.

  Examples include:

  - distributed versus one-off assets (for example, schools and railways versus a parliament building or a state art gallery);
  - metropolitan versus regional; and
  - primary versus support (for example, assets required to deliver core agency services to the community versus assets which are not, but are nonetheless required for the sustainment of the agency).

- **Asset Valuations**

  Various valuations are required for accounting and asset management purposes. Valuation approaches include:

  replacement value:

  - market value;
  - depreciated (written down) value; and
  - deprival value (takes into account utilisation/capacity evaluation and market values).

- **Asset Expenditure**

  All assets consume resources from initial planning stages through to final disposal.

  Annually, the sum of those resources, including the cost of managing them and the opportunity cost of capital invested in them should form the asset management budget. Compilation of budgets must have regard to historic and projected trends in utilisation and associated costs.

  Costs should be sufficiently visible in agency budgets for asset information and analysis and should be separated into the following categories to facilitate better management of future liabilities.

  - capital
    - improvement
    - replacement
    - acquisition
    - disposal
  - expense: recurrent / operational
    - sustainment
    - investigation (gathering asset data and evaluating proposals)

Asset Condition and Suitability

Condition standards need to be established for all assets on the basis of a hierarchy of levels determined by the physical condition, functionality (fit for purpose) and compliance issues.

There should be regular reviews of the standards that apply to all assets. Condition audits need to be conducted on all assets on a regular basis, preferably in conjunction with valuation and budgetary cycles. A technique for determining the required standard for assets is included in Appendix 2 — Examples of Techniques.

Asset Utilisation

Agencies should maintain data on the use of the assets against the maximum designed capacity of the assets. Use should relate to specific service levels delivered by means of the asset.

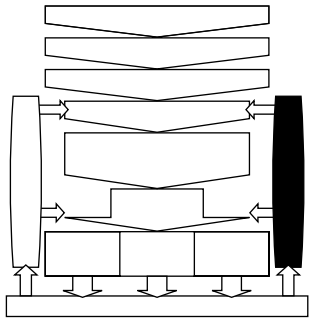
Analysis — Techniques and Tools

Common analysis techniques and tools that should be used to enhance the management of assets are as follows:

Gap Analysis

There should be a comparison between the desired level of performance and the actual level of performance being provided by the asset. Consideration should be given as to whether the assets

- are suitable;
- have the required qualities for that task, or
- are required at all.



Demand Management

Demand for government services often outstrips supply. Demands must therefore be managed in order that the highest priorities are identified and met. Demand management is a technique that involves active intervention in the market to influence demand for services and assets.

Life Cycle Costing

Life cycle costing is a technique that enables agencies to identify the total cost of owning and operating an asset. This technique can be used to compare options for investment and management of assets. Included in life cycle costing are the costs of:

- design and construction;
- use of investment capital;
- ongoing maintenance for the life of the asset;
- refurbishment;
- operation; and
- disposal.

- **Risk Management**

  Planning, designing, constructing, owning and operating assets involves significant risk.

  Risk management identifies and analyses the potential risk of an asset during construction and over its life. This includes such issues as inappropriate design, contractual disputes, decreasing values, functional obsolescence, cost overruns and legal liability.

  Governments and agencies can minimise the potential problems by applying risk management practices.

- **Value Management**

  Value management allows key stakeholders to participate actively in planning, designing and decision-making. The process ensures that all options and solutions to asset problems are considered.

  Value management achieves value for money from the procurement, refurbishment and use of assets. Value management may be used in all phases of the life cycle of the asset.

- **Economic Evaluation**

  Economic evaluation of assets enables options to be compared using methods such as cost/benefit analysis. Social, environmental, and other broader costs and benefits can be considered in order to compare and assess service-delivery options in economic terms.

- **Standards and Benchmarks**

  Standards provide a basis for measuring actual performance to determine if assets are used to the optimal level, are operated efficiently and are maintained to the appropriate level.

  The performance of an asset against any established benchmark may be displayed graphically. An example of this graphical representation is included as Appendix 2 — Examples of Techniques.

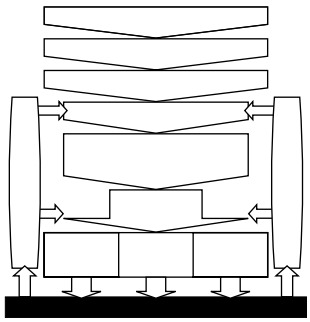
- **Communication**

  Effective communication between stakeholders is critical to service and resource planning. Major assets may involve many stakeholder groups that have a direct interest in the outcomes, for example, the provision of a new hospital.

  When dealing with complex assets, particularly during strategic and conceptual planning, facilitated workshops are encouraged to seek integrated outcomes based on a shared understanding of stakeholder needs. An example for development of an effective communication approach is included in Appendix 2 — Examples of Techniques.

Reporting

The framework is cumulative in nature and therefore regular reporting provides feedback that is critical to effective corporate planning. Regular reports encourage review and analysis of performance and, in turn, provide a basis for evaluating the ongoing relevance of plans.



Output budgeting requires agencies to focus on reports that relate to outputs and outcomes in the delivery of services. Agencies should report on the use and condition of their assets.

CONCLUSION

This guide provides the information that will give governments the opportunity to enhance service delivery, achieve value for money and minimise risk. It describes an advanced understanding in areas essential to the progression of asset management within member jurisdictions of the Australian Procurement and Construction Council Inc (APCC).

The concepts discussed enhance the ability to find solutions to managing an asset base. They also encourage the development of new ideas and alternatives to assist agencies meet the dynamic needs and expectations of communities for new and improved services.

This document is only the starting point for the next generation of asset management and seeks to encourage continuous improvement by all personnel who are involved with asset management. In particular, the APCC encourages the ongoing sharing of information, feedback and debate on emerging issues that include:

- performance measurement;
- depreciation and condition of assets;
- balance sheet management — asset aspects;
- jurisdictional developments and best practice initiatives;
- rewards for improved performance;
- consistency of approach within and across all jurisdictions; and
- integration of asset management data with other statistical data.

Acknowledging that effective asset management is a continually evolving process, it is intended that the APCC will develop practice notes on asset management issues as they arise. Practice notes will be made available on the APCC website www.apcc.gov.au.

MORE INFORMATION

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Related Internet Sites — As at 30 April 2001

The following APCC member authorities have each developed the concept of asset management and have publications and web sites describing their approach:

State/Territory	Publication Title	URL
Commonwealth Government	ANAO Asset Management Handbook	http://www.anao.gov.au/
Queensland	Strategic Asset Management — Best Practice Guidelines	http://www.build.qld.gov.au/
New South Wales	Total Asset Management Manual	http://www.gamc.nsw.gov.au/
Victoria	Asset Management Series	http://home.vicnet.net.au/~assetman/
Tasmania	Asset Management Guidelines	http://www.doe.tased.edu.au/facnet/guidelines/assguide.htm
South Australia	South Australian Strategic Asset Management Series	http://www.on.net/clients/pacs/ http://www.dais.sa.gov.au/publications/index.html
Western Australia	CAMS Guidance Material	http://www.cams.wa.gov.au/Web/cams.nsf/web/BAM
Northern Territory	Northern Territory Guidance Material	http://www.nt.gov.au/dtw/aboutus/branches/infrastructure/development/

APPENDIX 1 — THE COST OF SERVICE DELIVERY

Accrual Accounting. Accrual accounting is an accounting methodology that enables the recording of economic events and other transactions as they occur. Unlike cash accounting methodologies, accrual accounting has challenged organisations to realise that assets are no longer treated as sunk costs or free goods, and recognises all non-cash transactions in the bottom line assessment. All costs including HR, IT and Assets must be identified to fully appreciate the cost of an agency's output.

Asset management decisions have a financial impact on both the profit and loss account, and bottom line results. Asset and financial managers need to be aware of these likely impacts and conduct assessments of the full cost that assets contribute to the service that is being delivered.

The identification of all asset costs includes:

Planning Costs: Planning approvals, surveys, architecture, design, plans and business case preparation including the identification of the expected life of the asset.

Construction/Procurement Costs: Site costs, contractor costs, contract negotiations including the program of payments required when constructing or procuring an asset over more than the current period.

Depreciation Costs: Depreciation is usually described in financial terms where straight line and diminishing value depreciation methods are used to apply depreciation. Asset management can, through condition assessment and valuation, assess the remaining economic life of an asset.

Opportunity Cost of Capital or Equity Return: Equity return explicitly recognises the opportunity cost of holding assets, that is, the benefits foregone by not being able to apply the capital to its best alternative use.

Maintenance and Operating Costs: The maintenance and operating funds required to ensure the asset meets its desired life expectancy include current and non-current expenditure such as energy costs and periodic replacement of non-programmed events.

Refurbishment and Renewal Costs: The budget should reflect the intention to keep an asset and recondition it so that it can continue to deliver the required service. This includes the periodic replacement of plant and equipment.

Disposal Costs: The expected return from the disposal of the asset, the remaining useful life and the return likely to be realised, should be estimated and entered into the budget calculations. At this stage, thought should also be given to informing other government entities of the intention to dispose of the asset.

APPENDIX 2 — EXAMPLE OF TECHNIQUES

Example One — Techniques for Measuring the Cost of Service Delivery

The regular measurement and evaluation of performance data enables an agency to determine if it is meeting its goals in the most efficient and effective manner.

The key driver for public sector ownership and management of assets is the provision of service to the community. Unlike their private sector counterparts, public sector assets do not normally have an associated income stream and are not intended to generate a profit. The private sector is also affected by other different asset management imperatives associated with taxation and depreciation of assets. The application of private sector asset performance measures that are based on the premise of income and profit, for example, Return on Assets, Revenue Ratio, Revenue per m^2 etc is therefore not appropriate.

Primary Asset Performance Measures

Over their life cycle all assets are subjected to varying levels of usage, costs, changes in physical condition, and value. The management of individual assets and portfolios should be based on ensuring they remain able to support service delivery. It is essential that agencies set standards for the operation and maintenance of their assets as a basis for determining if the level of service is satisfactory. The manager's objectives should be to ensure that assets are used to the optimal level, that the costs of operation are contained within the available budget and that the asset is maintained to an appropriate standard.

A technique has been devised to allow the integration of the four parameters (Utilisation, Costs, Condition, and Value) so that an asset's performance can be charted over time and compared with other assets, that is:

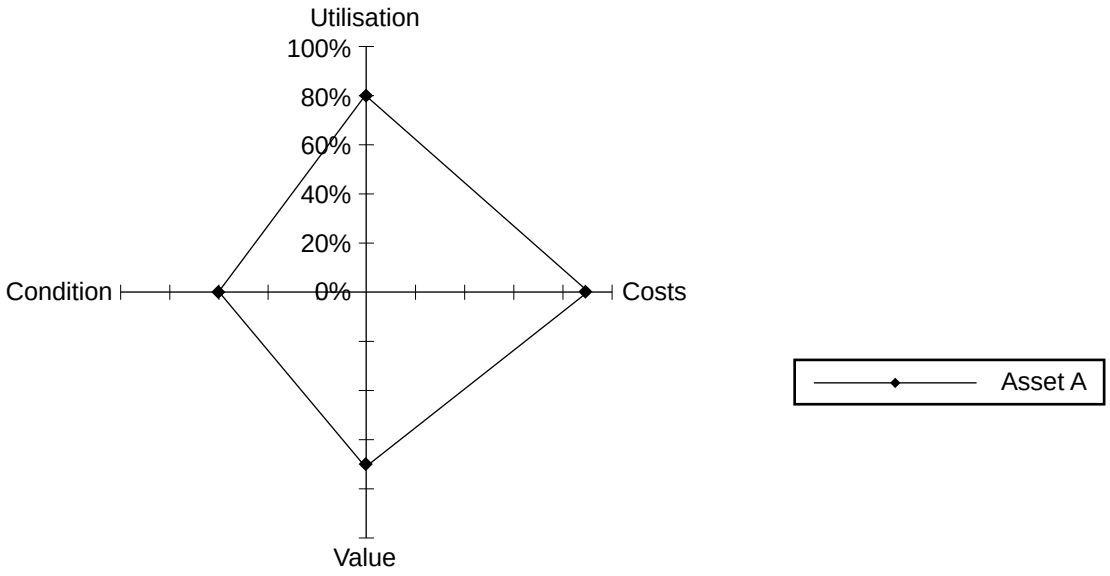
- **Asset Utilisation** (capacity versus utilisation)
- **Asset Costs** (budget versus actual expenditure)
- **Asset Condition** (possible condition versus actual condition)
- **Asset Value** (replacement cost versus depreciated value)

Each of these data sets contains quite disparate data that can be normalised and integrated by conversion to percentages.

Asset A	Utilisation	Costs	Condition	Value
	Capacity = 150 clients pa = 100%	Annual Budget = $65,000pa = 100%	PossibleCondition = 5 = 100%	Replacement Cost = $750,000 = 100%
	Actual Utilisation = 120 clients pa = 80%	Actual Expenditure = $58,000pa = 89%	Actual Condition = 3 = 60%	Depreciated Value = $520,000 = 69%

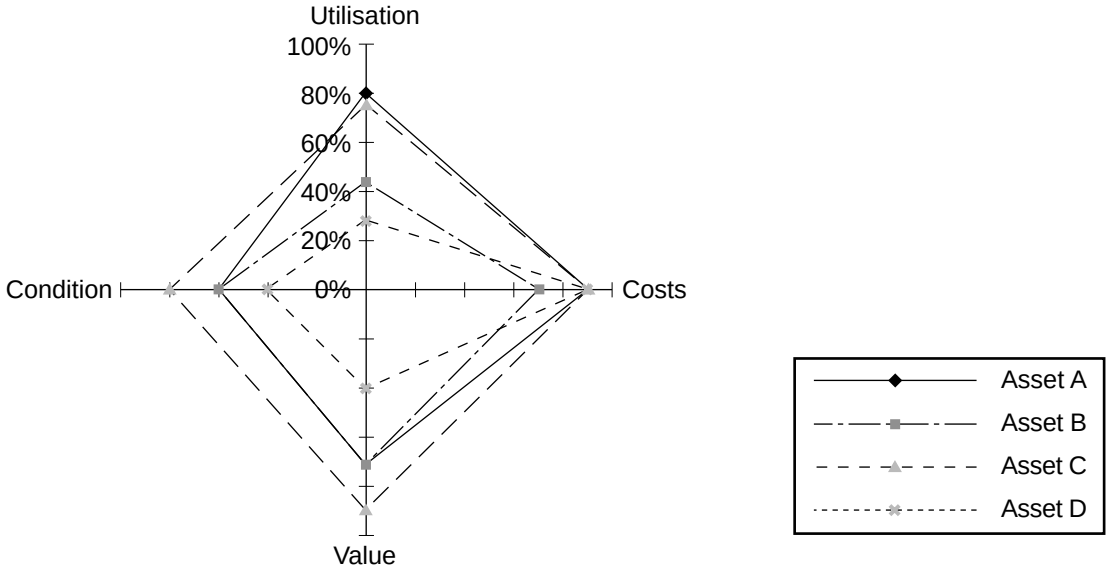
Once converted the data can be integrated and graphically displayed.

Figure 1: Integration of Performance Measures



Once the data has been collected and arranged into this form, comparisons can be made with other assets, or an asset's own performance over time can be charted and monitored.

Figure 2: Comparing the Performance of Assets



An analysis of this information can be used to determine the extent to which assets are appropriately located for effective service delivery.

Linking Asset Performance and Service Delivery

The cost of operating and maintaining assets has a large impact on an agency's capacity to deliver its services. There is a direct linkage between the cost of operating and maintaining an asset and the asset's level of utilisation. The compilation of the raw data for the above measures enables the asset manager to calculate the Cost Per Service. This measure should be a critical consideration in all aspects of agency business planning including asset management, for example:

Asset A	Year 1	Year 2	Year 3	Year 4	Year 5
Annual Asset Costs	$300,000	$350,000	$380,000	$420,000	$450,000
Utilisation (Service Nos)	1,500	1,800	2,150	2,200	2,300
Cost per Service	$200	$194	$176	$191	$196

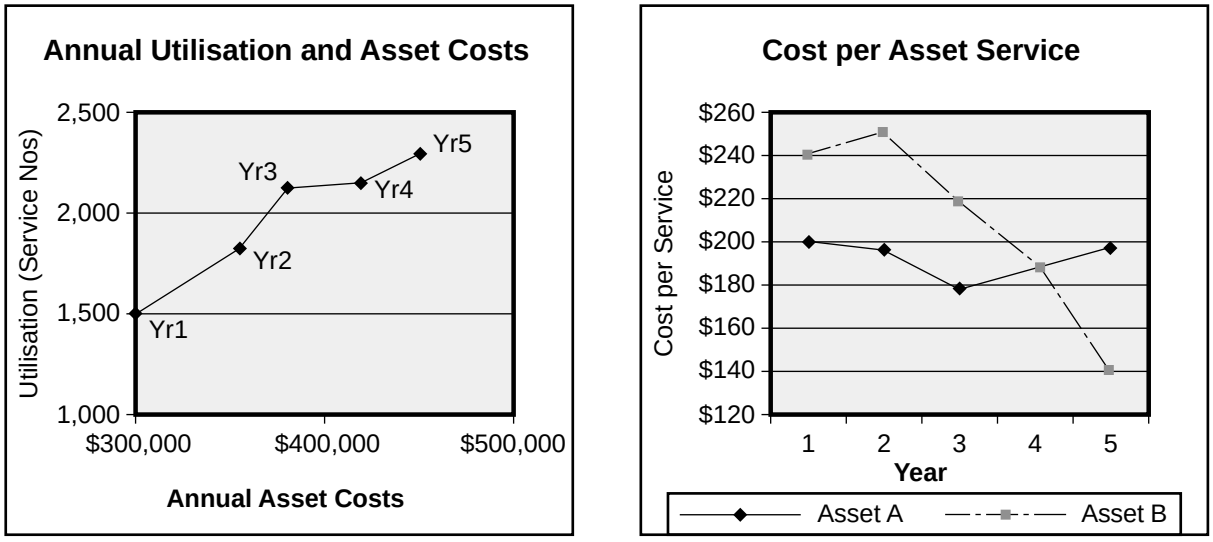


Figure 3: Costs: (a) Annual Utilisation and Asset Costs;
(b) Cost per Asset Service.

In due course these costs need to be integrated with the other costs of service delivery (for example, staff, IT and other overheads) to determine the aggregate cost per service. As shown in Figure 3 the Cost per Service can be compared as a basis for determining which is the most efficient asset within a portfolio.

Secondary Asset Performance Measures

Other useful secondary measures of asset performance are:

- total assets (number, area and value);
- cost per m^2; and
- maintenance cost as a proportion (%) of replacement cost.

Example Two — Technique for Determining Required Standards for Assets

Assets usually have many attributes that contribute to the achievement of the required service delivery; for example, availability, security, hygiene, comfort, aesthetics, image.

Some attributes are more necessary than others for the asset to perform a particular service role. Therefore maintaining all attributes to their original standards might well be an unnecessary burden.

Many maintenance standards such as electrical, mechanical and fire control systems are controlled by regulation. Standards for many other types of assets are more difficult to determine. For example, a room can be structurally sound, quiet, secure, and aesthetically pleasing. Some rooms will require lighting maintained to very critical standards, while security or aesthetics in the same area might not be of particular importance.

It is therefore necessary to define broad performance requirements that establish which attributes must be maintained for each asset and/or asset segment. The standard at which a particular asset is required to perform should be that which just allows it to satisfy its role in agency service delivery. Any gaps evident should be identified.

The range of activities supported by each asset and how long it is required to continue in service will provide pointers to the required attributes and hence the performance requirements.

Once the performance requirements have been defined, a range of performance is set for each parameter. The minimum value of this range for each parameter that achieves the desired performance attribute for each asset segment is then adopted as the asset standard.

The standard could be expected to vary throughout a single building or across a portfolio, depending on the asset's role in delivery of services.

Experience has shown that satisfactory results are achieved by describing say three levels within each parameter. These would reflect the highest, median and lowest levels of performance required across the portfolio or throughout the facility under consideration.

The standards should be written to guide those completing asset condition assessments and should be written specifically for the asset in question, being aware of its service role. Vague generalities, while easier to write, are difficult to interpret.

The standard of each parameter required for an asset to support the delivery of service, can vary significantly throughout a facility or across a portfolio.

Required levels of image may vary between a courtroom and a court waiting area. Higher levels of air quality control are required in an operating theatre than in a hospital ward, and lighting levels are more critical in a classroom than in circulation corridors.

Examples of performance levels for three parameters follow:

Image/Presentation

Level 1
The material or system is maintained to a level that indicates a high level of attention is paid to keeping it in serviceable condition.

The element or system may show isolated or minor signs of damage of a kind not easily removed without wholesale replacement or inordinately costly work, but an overall attention to maintenance and cleaning is obvious.

The element combined with the rest of the space provides a pleasant environment in which to carry out the activities accommodated.

Level 2
Fabric and finishes are maintained to a level that indicates a moderate level of attention is paid to keeping them in serviceable condition.

While defects may be visible to the facility user they will be tolerated if they are:

- of an extent and kind not easily removed without wholesale replacement or inordinately costly work,
- not seriously detracting from the overall image of the element or the space in general, and
- viewed within the context of the environment by the majority of users to be at least satisfactory for the activities accommodated.

Level 3
Fabric and finishes are maintained to a level that does not actively obstruct corporate objectives. Low levels of attention are paid to keeping them in a serviceable condition.

Low levels of maintenance and cleaning may be obvious.

The pleasantness of the environment provided by the element and the rest of the space is not important.

Waterproofness

Level 1
The building area must be considered to be highly resistant to water ingress. In heavy wind driven rain it must not allow entry of any water. There may be freak weather conditions that could cause water to enter the space but in such situations such ingress would be limited in volume and location such as to cause inconvenience but not to directly damage items of the collection. Similarly, accidental overflow or discharge of any services within or beyond the space would have a similar effect.

Level 2
The building area may experience minor leaking or flooding only after periods of heavy and prolonged rain. While inconvenient, this is not a serious threat to the fabric or use of the building. Leaks would be attended to as soon as they occurred.

Level 3
The building area is not completely waterproof but minor leaks/water seepage can be contained by the casual use of mops and buckets.

Slip Resistance

Level 1
Surface exhibits a high level of resistance to slip whether wet or dry either because of the physical property of material or the application of slip treatments. The pavement can be walked across quickly in high heels without undue danger of slipping. Where the surface is sloping the slip resistance is adequate to ensure safe pedestrian passage.

Level 2
Surface exhibits adequate slip resistance for careful passage by pedestrians in high heels or those with ambulatory problems.

Level 3
Surface exhibits adequate slip resistance for careful passage by pedestrian in flat-soled shoes.

Building Performance Standards

Eileen O'Connor Performance Centre

LOCATIONS	ASSET PERFORMANCE PARAMETERS				
	Image	Abrasion Resistance	Waterproofness	Slip Resistance	Resistance to Vandalism
Basement					
Preparation rooms	2	1	3		
Workshop	3	2	3		
Loading Dock	3	2	3		2
Level 1					
Kitchen	2	1	2	1	
Café	1	1	1	1	
Foyer/Entry	1	2	1	1	1
Staff Room	1	2		2	
Toilets	2			1	2
Level 2					
Theatre	1			1	
Theatre Lobby/Foyers	1	2	1	1	2
Offices	2	2	1		
Resource Centre	2	1	2		

Performance standards developed in this way are more strategic and allow more objective determination of maintenance requirements.

Example Three — Techniques for Communication, Co-ordination and Facilitation

A critical success factor of Asset Management (AM) is effective communication between stakeholders (including those involved in AM processes). For major assets such as new buildings, there may be many stakeholder groups having direct interest in outcomes (for example, the provision of a new hospital). Capturing the requirements of these various stakeholders is an essential part of both service delivery planning and asset planning.

A traditional “co-ordination of information” approach, represented in diagram A, is likely to be insufficient when dealing with complex assets, particularly during strategic and conceptual planning. In such circumstances, facilitated, participatory workshops are encouraged which seek to produce integrated outcomes based upon shared knowledge and understanding of stakeholder needs. This integrated approach is represented in diagram B.

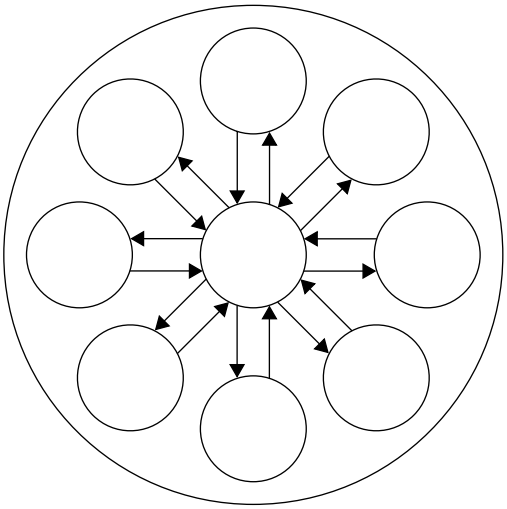


Diagram A

The ***co-ordination*** model relies on the co-ordinator for the passage of information from one area to another.

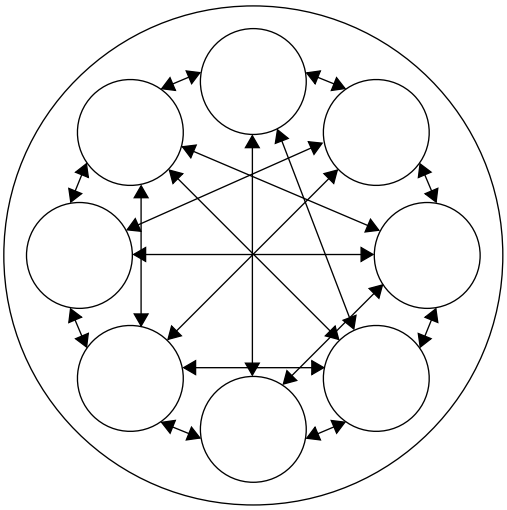


Diagram B

The ***Integration*** model demonstrates the facilitated sharing of information between all areas concerning the same problem. This model depends on expert facilitation.