



New South Wales
TREASURY

TOTAL ASSET MANAGEMENT

Demand Management Guideline

September 2004

TAM04-8

Demand Management Guideline

September 2004
TAM04-8

ISBN 0 7313 3325 X (set)
ISBN 0 7313 3260 1

1. Asset management – New South Wales.
2. Capital Investment.
3. Public administration – New South Wales
- I. Title. (Series : TAM 2004)

© This work is copyright. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced by any process without written permission from the NSW Treasury. Requests and inquiries concerning reproduction and rights should be addressed to:

NSW Treasury
The Executive Officer, Level 27 Governor Macquarie Tower 1 Farrer Place Sydney NSW 2000

General inquiries concerning this document should be initially directed to:
Arthur Megaloconomos (Tel: 9228 4402 or E-mail: Arthur.megaloconomos@mail.treasury.nsw.gov.au) of NSW Treasury.

This publication can be accessed from the Treasury's Office of Financial Management Internet site [<http://www.treasury.nsw.gov.au/>].

For printed copies contact the Publications Officer on Tel: 9228 4426.

Set consists of:

ISBN 0 7313 3254 7	Asset Information Guideline TAM04-7
ISBN 0 7313 3260 1	Demand Management Guideline TAM04-8
ISBN 0 7313 3266 0	Heritage Asset Management Guideline TAM04-9
ISBN 0 7313 3272 5	Life Cycle Costing Guideline TAM04-10
ISBN 0 7313 3278 4	Post Implementation Review Guideline TAM04-11
ISBN 0 7313 32849	Risk Management Guideline TAM04-12
ISBN 0 7313 32903	Sustainable Development Guideline TAM04-13
ISBN 0 7313 32962	Value Management Guideline TAM04-14

Further publications are also available in this series on the following topics:

ISBN 07313 33314	Asset Strategy Planning TAM04-1
ISBN 07313 33373	Capital Investment Strategic Planning TAM04-2
ISBN 07313 3230X	Asset Maintenance Strategic Planning TAM04-3
ISBN 07313 32369	Asset Disposal Strategic Planning TAM04-4
ISBN 07313 32423	Office Accommodation Strategic Planning TAM04-5
ISBN 07313 32482	Total Asset Management Template TAM04-6

Additional publications also available in this series on the following topics:

ISBN 07313 3302 0	Total Asset Management Capability Tool TAM04-15
ISBN 07313 3308 X	Total Asset Management Capability Tool - Snapshot Capability Review TAM04-16
ISBN 07313 3314 4	Total Asset Management Capability Tool - The Guide to Conducting a Full Capability Review TAM04-17
ISBN 07313c3320 9	Total Asset Management Capability Tool- The Capability Review Report Kit TAM04-18

TABLE OF CONTENTS

1.	Introduction	1
1.1	Purpose of the guideline	1
1.2	The demand asset linkage	1
1.3	Why manage demand	2
1.4	What is Demand Management	3
2.	Government policy on Demand Management	5
2.1	Agency roles and responsibilities	5
2.2	Reporting requirements	5
2.3	Monitoring and feedback	5
3.	The Demand Management process	6
3.1	Overview	6
4.	Benefits of Demand Management	14
Appendix A	Demand Management strategies	15
Appendix B	Industry examples of Demand Management	18

DEMAND MANAGEMENT - GUIDELINE

1 Introduction

1.1 Purpose of the guideline

In public sector asset management, demand can be described as the needs and expectations of the community and government as well as the ambitions and aspirations of sectional groups.

Communities expect that government at its various levels will provide for their security, for education of their children and the workforce, for transport of people and goods, and for community health. Sectional interests within the community also hope that their particular concerns, whether social or economic, will be catered for.

These needs, expectations, hopes and aspirations are the driving force for the supply of services. They are a key input into the process of asset management.

The purpose of these guidelines is to:

- raise awareness of the connection between community needs and expectations and the subsequent delivery of services and expenditure on resources including physical assets
- suggest ways that agencies can respond to the needs and expectations in a manner that best matches service delivery (and the relevant supporting assets) to the available resources
- assist agencies incorporate Demand Management techniques into their asset management planning

In the guidelines the notion of need, expectation, hope and aspiration will be grouped under the common description of 'demand'.

Government agencies are in the business of supplying services to the community. Physical assets are a means to providing these services. They are usually not the service in themselves.
--

1.2 The demand - asset linkage

Demand motivates the supply of services and leads to the provision and use of resources including physical assets. Community demand for security leads to provision of police services, judiciary and detention of offenders, leading to the construction and maintenance of police stations, courthouses and prisons.

Demand for education leads to schools and colleges. Demand for transport leads to roads, railways, seaports and airports. The list is endless. This process can be depicted as:

DEMAND → SERVICE → ASSET

The linkage between demand, service supply and provision of assets is not straightforward. Demand involves humans, and human behaviour can be very complex. As a simple example, when demands are satisfied by the supply of a service, new expectations arise. When one need is satisfied, other needs will also need to be satisfied.

People tend to compare their circumstances to others and expect equivalent treatment. For example, if town X receives a hospital, school, bridge or infrastructure, the citizens of town Y are encouraged to seek a similar asset.

Supply of a service tends to foster demand. Instead of the linear sequence as shown above, the relationship between demand, services and assets is often cyclical.



1.3 Why manage demand?

Over time communities expect higher level of services from government as part of a progressive improvement in the standard of living.

Public sector agencies have striven to meet these expectations by increasing the scale and scope of services they deliver. They have focussed on planning, organising and controlling the supply of services and resources required to support them. The rapid growth of our stock of physical assets over the past decades is evidence of how successfully this was pursued.

Focussing on service supply alone is not sustainable in the long term, as:

- demand will always outstrip supply
- the capital cost of additional assets must be considered in the light of the limited resources of the community at large, and
- it will cause the overall stock of assets to grow, bringing about an increase in the operating and maintenance costs of the assets.

The question of ensuring that the resources of the community are distributed equitably among the whole range of government services is also pertinent. Within the finite resource limits of the community, services provided of one type and in one region reduce its ability to provide other types of services or to deliver them elsewhere.

A whole of government view of service delivery focuses on delivery of a range of government services that will provide maximum benefits to the community overall rather than on individual agencies maximising the delivery of a particular service.

There are circumstances where it may be beneficial to increase the demand for certain services. For example, services that promote healthy lifestyle changes will improve the quality of life of members of the community at large. Other examples could include promotion of public transport to reduce the use of private vehicles with their resulting smog and gridlock.

Consideration of community expectations and demand, whether they are related to promoting or decreasing the expectations and demand should be matched with consideration of supply wherever the public sector plans to provide services. Neither the community nor the government should rely on supply side policies alone.

If agencies keep building assets without some constraint on demand it is likely that their capital requirements to operate and maintain these assets will eventually jeopardise the services they are seeking to provide.

1.4 What is Demand Management?

Demand Management policies enable the interaction between supply of service and demand for assets.

Demand Management is defined as:

‘The active intervention in the market to influence the demand for services and the assets generated and/or used in supplying these services to best match available resources to real needs and ensuring the services provided are delivered with the best value for money.’

Successful Demand Management requires agencies to clearly understand that their corporate role is not to provide ever more services, but to provide:

- effective service outcomes to meet identified community needs
- assess if this need is changing and
- to respond appropriately and within the available resources.

This requires that agencies develop a close working relationship with their clients based on thorough knowledge of their characteristics, needs and expectations.

Demand Management is not intended to reduce the scope or standard of services to offset management deficiencies elsewhere. It aligns demand for services with the available resources to ensure genuine needs are met and community benefit is maximised.

The concept of managing the demand-service-asset relationship in a holistic sense is one of the basic tenets of Total Asset Management. It affects all elements of an agency’s operations - its financial, social, technical and environmental activities. It is a fundamental aspect of the day-to-day business of the public sector and its people.

Some agencies are already applying Demand Management in its various forms with considerable success.

Demand Management has the potential to become a key element of reform in the resource planning and management process, encouraging agencies to jointly plan service delivery.

Demand can be managed in a variety of ways:

- by reducing the underlying need for the service.
For example, actions to raise awareness of the benefits of pregnant women taking folate will reduce the need for medical and social support for children with neural tube defects
- by changing the way in which community needs will be met to reduce pressure on available resources.
For example, the Department of Housing is trialling different accommodation alternatives to reduce the demand for individual accommodation units
- by educating consumers to limit their consumption.
For example, educating water users to save water during droughts has led to significant reduction in demand.
- by pricing mechanisms.
For example, charging consumers a truer price for water encourages more responsible use and may reduce the demand.

-
- by revising service delivery levels.
For example, the threshold at which benefits become available or the level at which benefits are provided will be changed.
 - by imposing legal penalty.
For example, fines can be imposed for use of fixed sprinklers during the evening to reduce demand for additional reservoir pumping capacity.

Selecting the correct technique to manage particular demands is critical as the financial and social implications on the target group and the community generally could be severe.

2 Government policy on Demand Management

2.1 Agency roles and responsibilities

All agencies need to apply the principles and procedures of Demand Management to all aspects of their service delivery. Relevant stages would include, but are not be limited to:

- strategic service and resource planning
- the preparation of economic appraisals
- the conduct of Value Management Studies.

Each agency is expected to apply the principles of Demand Management in a structured and systematic manner that suits the nature, scale and complexity of their particular programs and projects.

2.2 Reporting requirements

There are no separate overall reporting requirements for Demand Management. Agencies would provide an analysis and discussion of the underlying demand and its management within existing formal reporting structures concerning the acquisition and use of physical assets. Some agencies, such as Sydney Water, have separate Demand Management reporting requirements under their Operating Licences.

Examples of formal reporting structures where this may be appropriate include Economic Appraisals, Value Management Study Reports, annual Capital Investment Strategic Plans and annual Maintenance Plans. Within economic appraisals, Demand Management issues can be addressed within the context of the 'no-build' options.

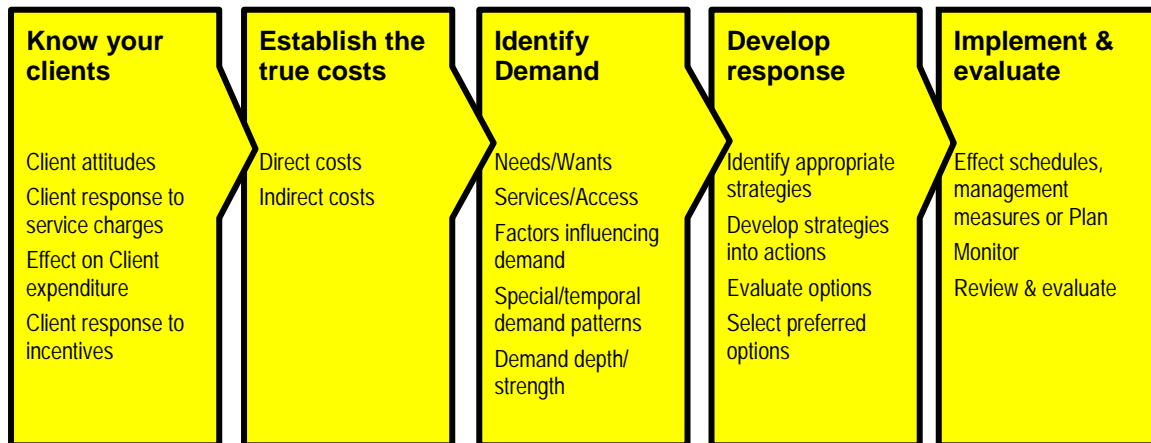
2.3 Monitoring and feedback

Demand Management is an evolving process requiring ongoing review in order to achieve the most equitable, cost-effective and efficient service delivery and best use and distribution of resources. Agencies need to regularly monitor the effectiveness and achievements of their Demand Management processes and, where necessary, fine tune and/or re-define measures to achieve the desired outcomes.

At an early stage in the application of Demand Management, review and monitoring will be largely restricted to qualitative assessment of the efficiency and effectiveness of Demand Management measures.

As agencies become more familiar with Demand Management and skilled in the application of its procedures, they will be expected to develop more formal reporting procedures based on quantitative performance evaluation criteria.

3 The Demand Management process



3.1 Overview

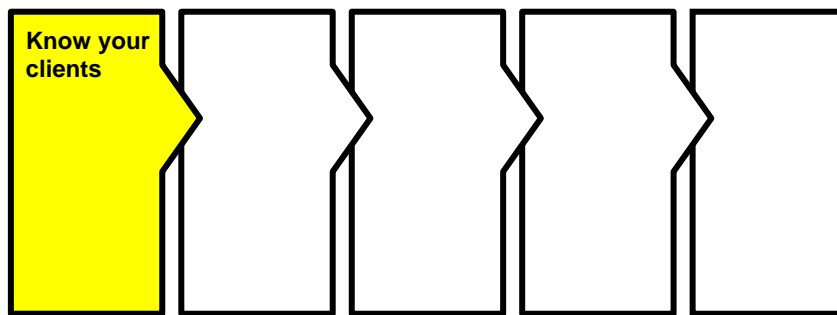
Demand Management involves a number of key steps within the three characteristic phases of any strategic management process - **Preparation, Analysis, Planning and Implementation.**

The preparation phase involves gaining a proper understanding of your clients together with establishing the true costs of providing service. This provides the basic information for the **analysis and planning** phase in which the demand is clearly identified and a response to its management formulated.

In **the implementation** phase, a plan is prepared documenting the process stages including procedures for implementation, monitoring and evaluation of the defined Demand Management response.

This process is outlined in the diagram above. While it should be applied at each stage of the Asset Management process, it is an essential part of the development of the Service Delivery Strategy. NSW Premier's Department has developed a guideline on developing a Service Delivery Strategy. This can be accessed through the Links part of the Asset Strategies section of the TAM Manual).

Stage 1 Know your clients



Supply strategies require you to know your services and products. Demand strategies require a comparable knowledge of your client's needs, motivations, expectations and operating procedures. This enables an agency to better serve its clients, and provides the basic information required to evaluate and distinguish 'needs' from 'wants', and the demand for services.

The client's response to changes in service and/or service levels

The decisions of clients to accept or oppose demand side initiatives will be influenced by how they perceive the changes will affect their activities.

The effect on the client's expenditure

The impact of Demand Management strategies on the client's expenditure must be considered. The effect will vary with the:

- the wealth of the consumer and the density of their use of services
- the intensity of their reliance and use of services
- availability of alternative form of service
- the client's perceived ability to change their consumption patterns.

Part of the solution is often to empower the client to see viable alternatives to the service by:

- information and education on lifestyle changes
- offering alternative service delivery methods.

The client's attitudes

The attitudes of clients to the agency, the service offered, their social values and other factors will affect whether they will participate in and support Demand Management initiatives. In each case empowerment of clients to see alternatives will reduce the likelihood of defeatist client/victim mentalities emerging which make it difficult for them to adapt and engenders resistance to agency action.

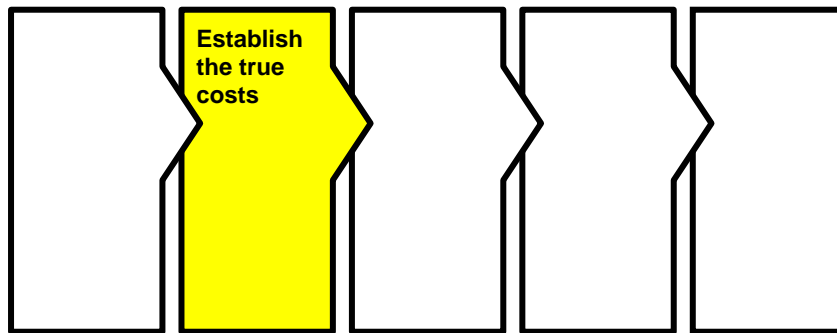
The client's response to incentives

Incentives are useful to attract client participation. These can be explicit (eg. a financial benefit) or implicit (eg. an improvement in the quality of life of future generations). Incentives can also include the provision of other services to offset the impact on clients.

Lower prices through increased production and decreased costs enabled Texas Instruments to gain a major share of the hand-held calculator market. However, when the company followed the same approach with digital watches they were unsuccessful - people found the watches unattractive.

They did not know that their customers wanted attractive, affordable digital watches.

Stage 2 Establish the true costs



Knowledge of the true costs of providing services and operating assets - whether financial, social or environmental - is essential for sustainable service delivery.

For example, many inner budget agencies use heritage-listed assets, which place particular obligations on their budgets.

Knowledge of the true costs of these obligations enables government and treasury to establish a more rational and equitable operating environment for such agencies, thereby improving their efficiency of service provision.

With Demand Management, a thorough knowledge of the true costs of service provision and asset operation provides an essential basis for:

- assessing the impacts of potential strategies aimed at influencing demand
- monitoring and evaluating the effects of the chosen Demand Management response.

The true costs of providing service and associated asset operation encompass:

- the full range of costs to the agency
- any costs that fall on other agencies or sections of the community.

Both the 'financial' and 'economic' costs need to be established.

Concerted action in diverse fields such as smoking prohibition, micro-economic reform and environmental protection was preceded by information on true costs. Knowledge gives the incentive for change.

Financial costs are evaluated by assessing the value of net cash flows that result from the implementation of a project.

Financial cost will generally be defined by an agency's accounting system, which should be able to show:

- interest and redemption of loans
- allocations for extensions, renewals and improvements of assets and technology
- allocations for maintenance and operating costs
- recurrent cost of staff
- administrative overheads.

Economic cost is derived from analysing all the costs and benefits of various ways in which a project objective can be met.

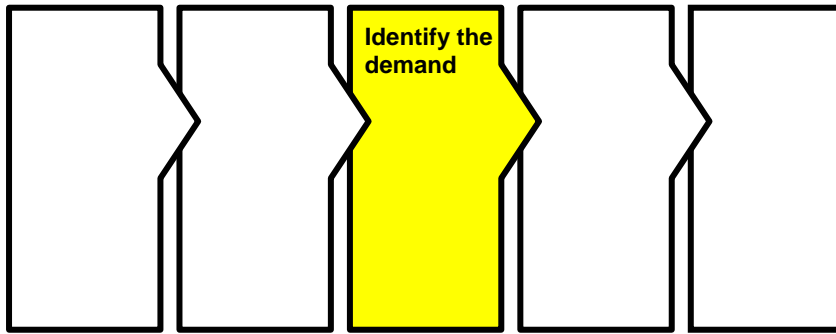
An economic appraisal of these costs shows:

- whether the project benefits exceed its costs
- which option to achieve an objective has the highest net benefit, or
- which option is the most cost effective if project benefits are equivalent.

Sydney Water uses an approach that ranks demand options in terms of levied cost. (ie. the present value of cost of the option to the community divided by the present value of the annual reduction in demand for water resulting from the option).

This cost does not include costs and benefits that are transfer payments between Sydney Water and its customers, such as: forgone revenue, reduced customer bill or proceeds from sales of reclaimed effluent. It represents the cost to the community to achieve a certain level of water saving by means of reducing demand or reducing losses. In Sydney Water's calculations 'cost to the community' means cost incurred by Sydney Water and its customers.

Stage 3 Identify the demand



Before Demand Management options can be developed, the current and future demands must be identified and quantified.

Data can be obtained through traditional market and demographic analyses. These analyses should be aimed at providing the baseline data to establish:

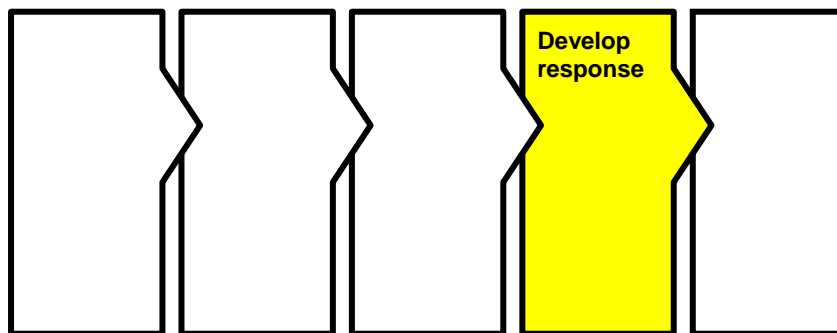
- needs as distinguished from wants or expectations
- demand for services as distinguished from demand for assets related to those services
- the factors which influence the demand
- spatial and temporal demand patterns
- the depth or strength of the demand.

Understanding the 'needs vs. wants' and 'service vs. assets' relationship are central to identifying the real demand since there is often a direct link between these relationships.

For example, the community may want a hospital (asset) but the need (service) is for health care. They may want schools, colleges, universities, etc but the need is for education. Other examples are listed in the adjoining table.

WANTS (ASSETS)	NEEDS (SERVICES)	UNDERLYING NEED
Hospitals	Health Care	Health & Wellbeing
Schools Colleges Universities	Education	Employment / Career Readiness
Police Stations Court Houses Prisons	Security	Community Safety & Security
Power Stations	Electrical	Comfort Security Technology
Dams	Water	Clean hands/clothing Thirst Green gardens
Roads Railways Seaports Airports	Transport	Ability to relocate Access to services
Parks Playing Fields Community Facilities	Passive/ organised leisure activity	Recreation

Stage 4 Develop Demand Management response



This key stage in the Demand Management process involves identifying appropriate strategies that could be used to influence demand and combining them into options for evaluation.

The types of strategies that can be used to influence demand generally fall under four generic headings. These are shown below and described in detail in Appendix A.

Education Aims to influence the level of demand by making clients aware of the financial, social and environmental costs and benefits of their actions.
Pricing Aims to change demand by altering the unit price charged for a service.
Technological Innovation Can result in less resource-intensive solutions to demand or provide alternative measures to offset demand.
Management Procedures Involve changing administrative and management practices to alter the way services are supplied, to whom they are supplied and/or resources used in meeting demand.
Regulation and Operational Changes Are other management procedures, which can be used alone or in conjunction with other Demand Management techniques.

The attraction of working on the demand side is the almost limitless variety of approaches that can be used to influence demand. There is no one solution. In many cases a range of coordinated strategies will often be more successful than a single strategy.

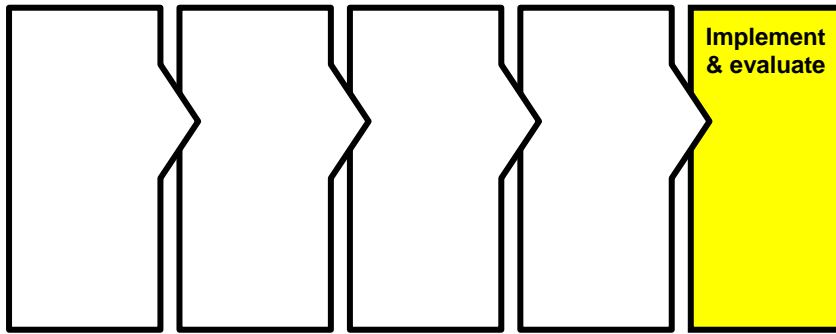
The key is to be able to seek out the effective strategies by identifying and evaluating as many options as possible.

During early stages of Demand Management, agencies should be prepared to experiment to see what works and what doesn't in particular situations, and to apply the same energy and cleverness that has characterised past efforts in the supply side where services have been tested and refined over a long period.

Value Management has proved to be invaluable in uncovering innovative options and evaluating their efficacy, and should be considered an essential companion to demand side management. It also has a role in testing the validity of the demand at the outset of the process.

The rigour of identifying and evaluating options can expose fallacies in the assumptions that many people take for granted when approaching a problem. This leads to a clearer understanding of the problem itself, and consequently to the chance of finding a more effective solution.

Stage 5 Implement and evaluate



As part of any implementation process, a Demand Management plan needs to document:

- client profiles
- true costs of providing services
- the demand analysis
- option analysis and the preferred option
- implementation and evaluation.

The implementation and evaluation section of the plan could include:

- programs to inform clients of Demand Management initiatives and why they were introduced and to empower clients to find alternatives
- training for staff in the skills involved in successfully applying the Demand Management strategies.

The implementation plan should also include targets for altering demand and a structured procedure for evaluating the effects of the selected initiatives on demand, costs and, where applicable, revenues.

Where quantitative measures are desired, data will need to be collected and assessed to identify changes in demand directly attributable to the selected Demand Management initiatives.

Particular attention should be given to monitoring and evaluating the impacts on clients. Significant hardships not predicted should be remedied by timely supplementary action.

Identify any unexpected outcomes such as transference of demand from one type of service or product to another.

4 Benefits of Demand Management

The combination of supply and demand side policies will allow agencies to optimise the trade-off between available resources, service delivery and asset performance and cost, for the mutual benefit of both the agency and its clients. It will allow a fairer distribution of the limited resources available to the public sector and better outcomes obtained for the public funds involved.

The benefits of Demand Management will vary with the type of service provided. There have been sufficient examples of dramatic savings in electrical power consumption, water consumption, transport usage and waste disposal to demonstrate the value of the process.

The Sydney Harbour Tunnel has reduced traffic delays and travel times. It has also provided the opportunity to dedicate one lane of the Harbour Bridge for buses.

In the long term, the resulting shorter bus travel times will encourage public transport reducing the demand for further car crossings.

The benefits of Demand Management can be summarised as improving value for money spent on services through:

- more efficient allocation of resources to programs and projects of greatest need
- reduced waste and misuse of resources by reducing the provision of unnecessary services by communicating (through charges, education or other means) the true cost of the service
- deferred capital and recurrent expenditures by reducing excessive consumption
- greater client participation and control over the cost of the service.

Consistently rising demand for water in the Hunter region suggested the need to build a new dam by 1987 at an estimated cost of \$100 million. The dam would raise water prices for many years and flood large areas of valuable rural land.

However, using pricing and education Demand Management strategies, the Hunter Water Board was able to reduce future demand by 30% enabling the dam, along with an additional \$50 million for reticulation works, to be deferred for 10 years.

The Hunter Water Board continued to meet the community's need for water at a lower longer-term cost and avoided the environmental issues associated with the proposed dam.

Appendix A Demand Management strategies

A1 Introduction

Community demands mirror social circumstances. Issues, which range from basic physical needs, economic conditions, technological change and tradition to advertising and fashion, influence them. Agencies should not simply follow community demands - this can be a path with no end. Agencies should realise the impact the services they provide have on individual consumers and the community generally.

Agencies should attempt to identify and separate genuine 'needs' from more unrealistic 'wants' in order to allow the limited resources of the public sector to be targeted effectively to where they can do the most good.

There are many ways of influencing demand. They generally fall under the following four headings.

A2 Education

Education strategies trade on the assumption that awareness of the costs and benefits of various types of consumption will change the behaviour of clients. This in turn will influence the demand for public sector services - and thereby the demand for assets.

Another role for education is to temper public expectations to the realities of the prevailing circumstances. Lobby groups sometimes seek to raise expectations (ie. to elevate demand) above reasonable levels, and even to distort the public perception of the benefits and costs.

To satisfy these unrealistic expectations, funds tend to be diverted from areas of real need. Education offers a method of countering this situation.

In the private sector, the strategy might be more appropriately called promotion - one of the private sector's most powerful marketing tools.

Examples of where education has been used to alter demand and asset requirements through behavioural patterns are illustrated below.

As with all strategies there is a time delay between commencing an education strategy and achieving the changes sought. This will vary with the activity or attitude, but in the case of entrenched behaviour that is being reinforced by commercial interest such as smoking, the avoidance campaign can be arduous.

Sometimes the link between the issue at the basis of the education campaign, and the effects sought on the asset are indirect, whereas in other cases good correlations occur.

	ISSUE	EFFECT SOUGHT ON ASSETS
Health	Smoking avoidance	Fewer hospital beds Fewer operating suites Fewer nursing homes
	Sun protection	
	Heart disease	
Waste Disposal	Recycling	Fewer land-fill sites
	Less road damage	
	Conservation of scarce resources	
Driving	Alcohol consumption	Fewer hospitals Fewer courts
	Speeding limits	
	Seat belt restraint	

A3 Pricing strategies

The underlying premise of pricing strategies is that, when clients are charged the true cost of the service, consumption will reflect its true value to the client. On the other hand, if something is cheap, there is little cost incentive to use it prudently and avoid wastage.

An agency can choose to encourage or discourage consumption; to direct consumption from one form to another; or to encourage the option of choice over levels of service by offering a range of rates (eg. 24 hour availability at \$x/hour or 8 hour availability at \$y/hour).

Pricing strategies are being used extensively by commercial sector agencies, particularly the power and water authorities, where performance is dominated by concepts of economic efficiency and commercial discipline.

Knowledge of the true cost of providing a service and related assets (see Section 3.3) is the starting point for the development of pricing strategies. Decisions can then be made regarding the cost recovery structure on which pricing is to be based.

In a perfectly competitive market, it is generally accepted that for most services the price should be based on the marginal cost (ie. the cost of producing an additional unit) rather than the average cost. Marginal cost pricing means that all costs due to an increase in the output of a service are incorporated into the price of the increased output.

The economic viewpoint is that pricing based on average cost of production can be inefficient and that the optimum allocation of resources occurs when the price equals the marginal cost.

For Government agencies that are monopoly suppliers, prices set at marginal cost may fail to cover total costs so requiring a subsidy payment. For these agencies to break even or achieve a lower subsidy level, prices may be set either using a Ramsey pricing or an average cost pricing approach. While pricing strategies can be effective in influencing the location and distribution of demand and its occurrence with time, they can often result in unexpected outcomes.

Demand can be simply transferred to other services. A decision to recover the cost of bus and rail transport could lead to increased road usage and in turn, increase demand for medical services resulting from a pro-rata increase in road trauma and air pollution.

Care is needed in the formulation and application of pricing structures aimed at influencing demand.

A4 Technological innovation

Technology can be used to influence demand for assets by offering less asset-intensive solutions to the demand, or alternatively by offering measures to offset the demand.

Technological systems pervade almost every aspect of service provision. Increased use of the available innovative and advanced systems can be a powerful means of reducing the demand for, and dependence on, capital assets.

Technology can increase the demand for services, increasing overall cost. Less invasive surgical procedures may make new procedures appropriate for more patients.

Innovative Building Design

Technologically advanced control systems for energy efficient air conditioning, ventilation and lighting reduce power demands. This can delay or even remove the need for new or upgraded power stations.

Health Services

High technology non-invasive surgery techniques can reduce the time patients spend in hospitals thereby reducing the demand for overnight hospital accommodation, catering, laundry and so on. Overall demand may be managed through increased use of ambulatory care and non-hospital based services, resulting in a change in the venue from which services are provided.

Computer Data Storage and Retrieval

High technology advancements in this area has the potential to allow remote access to agency data, making information kiosks possible, and making access to government services more streamlined and economic.

A5 Management procedures

Unlike the other strategies, changes to management and administrative procedures alter the demands placed on an agency's existing assets and other resources.

This can be achieved directly by utilising other assets outside the agency through long-term leasing or short-term hiring arrangements, or by sharing another agency's under-utilised assets and resources. It may be achieved indirectly by changing the way services are provided, or, the delivery of government services may be contracted to the private sector.

NSW Health has introduced several asset sharing service delivery solutions. Community health services have been co-located with public hospitals at Coffs Harbour Hospital and Manning Base Hospital and co-location of community health services and General Practitioner clinics at Iluka.

A private hospital has been co-located on the public hospital site at Royal North Shore.

A Motor Registry Office used to bill all its licence holders at the end of the month, so that for three weeks out of four there was little demand for space. But in the fourth week, the week that everyone came in to renew their licences, the crowds would extend out onto the footpath. The Registry Office claimed that it needed enlarged premises to cope with this 'demand'. But changing its management practice to continuous billing solved the issue far more cheaply.

Appendix B Industry examples of Demand Management

B1 The water supply industry

Water supply authorities have been introducing demand side strategies for some years (leaving aside restrictions imposed in time of drought, a demand side control used since the beginning of history). The objective has been to match consumption to the capacity of the resource and to defer the expansion of headworks such as new dams, pumping stations and supply mains, as well as distribution networks.

These headworks and distribution networks are expensive and can be environmentally contentious. Water pricing has been the main weapon, with a progressive move to tariffs based on the level of consumption in place of tariffs based on property values.

Tariffs based on property value are not being discarded. These tariffs are attractive because the income stream is predictable and assured, whereas incomes from tariffs based solely on consumption tend to be highly variable, depending on climatic and economic conditions from year to year.

Consequently, authorities are tending towards recovery of capital expenditure by a base charge determined by property type or value or connection size, plus a consumption component (or series of components) determined by the volume of water consumed.

Systems based on charging for water use depend on the ability to measure consumption; so it is necessary to install meters for all clients. This is expensive, and each water supply authority has had to assess the benefits that might accrue.

In practice, the effect on water demand has been dramatic. There are examples where meters have been installed coupled with a moderate pricing policy, annual consumption has been reduced by more than 30%.

The argument against 'pay for use' and metering arises where there is surplus capacity. In such a case the financial reasons for reduced consumption may be insufficient to justify the changeover costs, but arguments of conservation of resources remain valid.

As meters and pricing policies are introduced, the process can be progressively refined in consultation with users to allow prices to match levels of service. For a higher or lower price, the client can select the reliability and volume of service he/she wants to pay for, instead of the 'one service - one fee' arrangements of the past.

Water authorities are also introducing educational programs to influence consumption. These programs appeal to the financial, environmental and moral concerns of the community. They advise on how to:

- reduce the volume of water used industrially and domestically
- reduce wastage by correcting leaks
- handy hints such as how to use more efficient garden watering systems and how to select plantings that need less water.

Some agencies, such as Sydney Water are implementing a comprehensive package of Demand Management options including:

- water efficiency measures such as the auditing and retrofitting of residences and commercial/ industrial facilities
- active leakage reduction on its water supply system
- recycling of effluent from sewage treatment plants
- increased pricing of water to reflect the true value of resource

-
- lobbying for the introduction of appropriate water efficiency standards for showerheads and washing machines
 - potential introduction of low-level permanent restrictions.

B2 The electrical power industry

Electrical power supply agencies lead the field in developing and analysing demand side programs. This is due largely to the impetus given by the energy crises of the 1970's and the enormous costs involved in expanding the supply capacity of a power grid.

The agencies realised a dollar spent on influencing consumption gave a higher return than a dollar spent on increasing supply.

Demand side strategies have mainly involved actions on the clients' side of the meter, either directly caused or indirectly stimulated by the agency. These actions include:

Load management

These are activities by which the operation of a client's equipment may be altered to change the level of demand. Incentives in the form of rate reductions are usually offered.

Load controls can work in two ways: clients can control their loads by voluntarily altering the use of equipment in response to pricing strategies. Or, agencies may control clients' loads by utilising a signal activated remotely or at the point of use.

Remote control involves the use of a communications system, while point of use control may involve techniques such as cyclic timers, time clocks or thermostats.

Strategic conservation

The objective is to reduce client consumption through energy conservation programs.

A broad spectrum of programs has been devised covering almost every major end use and every appliance. These programs combine pricing incentives, education and technological innovation.

Options include installing insulation within buildings to improve thermal performance; improved heating, ventilation and air conditioner efficiency; solar programs; and energy efficient appliances and uses.

Pricing Strategies

A wide range of rate options is being used by different agencies with the objective of:

- obtaining an optimum electrical load distribution
- minimising costs to clients
- preserving the financial viability of the agency
- minimising future costs
- addressing social and environmental concerns.

Extensive literature is available on the various systems being used in the electrical power industry.