AMQ INTERNATIONAL
STRATEGIC ASSET MANAGEMENT

For Practitioners, Policy Makers and Planners in Public Infrastructure

From the fractals collection of Sprott Physics entitled "Focus"

SERVICE CENTRIC FOCUS

START THIS ISSUE AT THE BACK!

Yes, that's right, read this issue of SAM as if it were a newspaper and you were reaching first for the sports pages. Because on the back page is a Quiz - a series of important questions for asset managers, the answers to which will be found in this issue. (And it always helps to know what you are looking for!)

Everyone, when they start to think about asset management, starts with the question "What do we have?" and then we will look to see what condition it is in, where it is, etc. It is the natural way to go. But it is not the most productive way to go.

It has taken us many years of trying to communicate the benefits of asset management to decision makers, customers, policy setters and regulators to belatedly come to the conclusion that THEY are not interested in what we DO, but in the OUTCOMES for them. In other words, they take a SERVICE FOCUS. This issue explains why it pays us to do likewise. It gives direction, saves money, and generates major user support!

Consider and enjoy! Penny Burns

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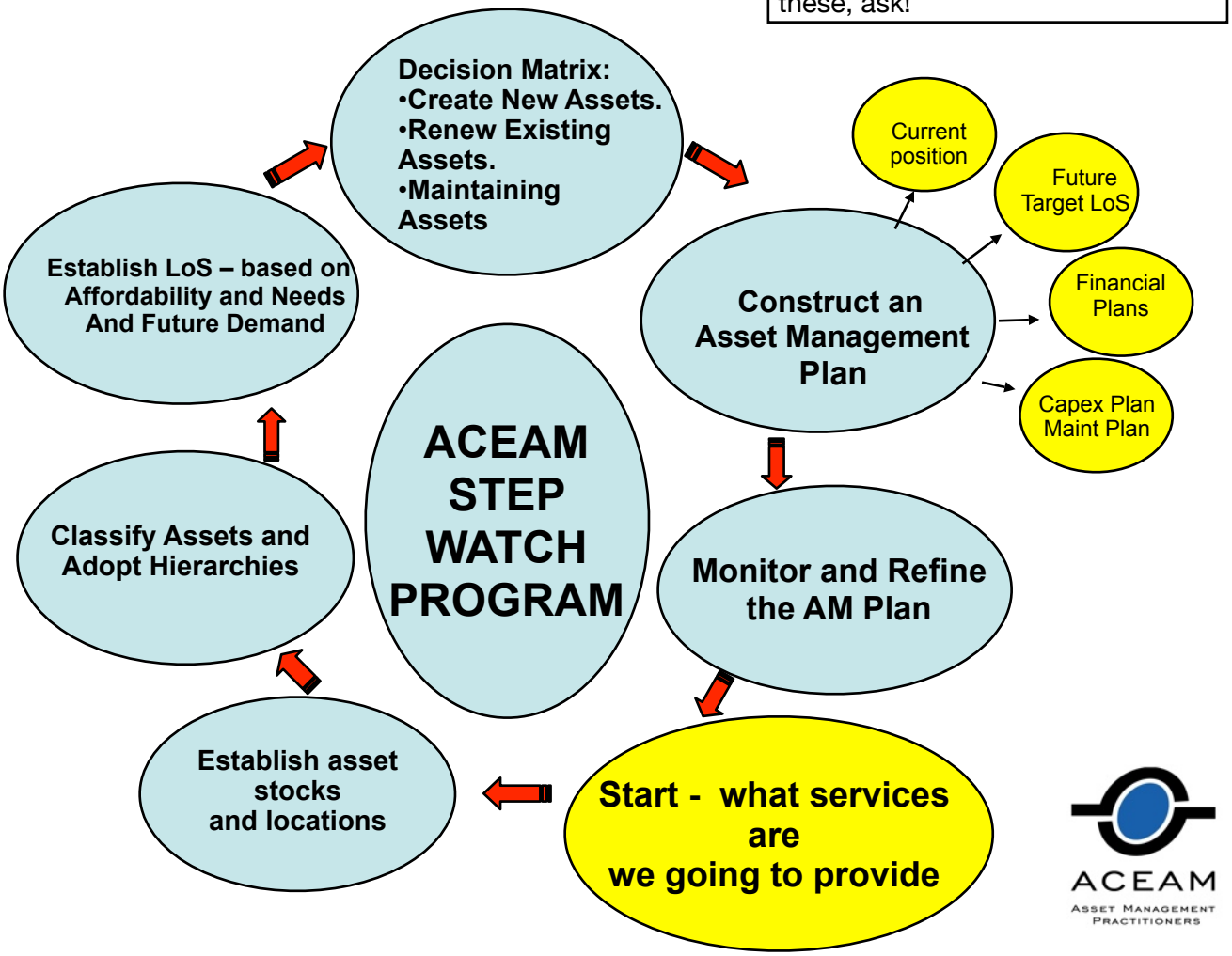
The Service Centric Focus

In the last issue of SAM (#215 “Breakthrough”) we introduced Ashay Prabhu’s service centred approach to asset management, in which we start by first defining what services we wish to produce and then look at what assets we have and determine whether they are in the appropriate condition and location. (See diagram below)

Traditionally we have started asset management and asset management planning by first looking to document what we have and what condition it is in. It seems only natural! And, in Australia and New Zealand, this approach was given added emphasis because of the need to establish the value of assets for the balance sheet with the introduction of accrual accounting. But this starting point forces us to focus on the assets themselves, rather than the purpose for which we have acquired, and continue to maintain them.

What we have now discovered is that if we put the service focus first, many of the asset management problems that we have been grappling with become much easier! (See the Quiz at the end of this issue for examples of the benefits.)

Apologies: Sharp eyed readers would have noticed that I inadvertently switched the pictures and text on pp 5-6 of the last issue. The correct version is available in the electronic version on the website, www.amqi.com. If you don’t have a password to access these, ask!



Asset Hierarchies

The same physical asset will run down at a different rate determined by its required use, its location, its level of usage, and how the assets (and the services they provide) are perceived. Therefore to understand and manage assets they need to be assigned to hierarchies: functional, region based, usage based or perceptions based.

Services

Some years ago I told the story of the water authority that thought it was providing a good service because it provided clean water 99% of the time. To do so, however, it needed to periodically flush the pipes. Anyone using the water service at the time of flushing experienced not water but fluid mud! From a customer's viewpoint, the service was not good. When the authority took the customer viewpoint, it first started to announce when flushing would take place, then found ways to reduce the impact.

Asset hierarchies are based on an understanding of what services and service levels are being provided. Converting strategic objectives into a service delivery framework is about understanding what is the service:

We think we are to provide
We are being told we should provide
Our customers believe they should be provided
What we are really providing
What we can afford to provide
And bringing ALL of these into congruence.

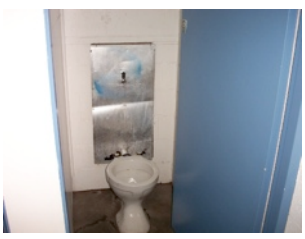
This requires communication with customers and all levels of the organisation from field operatives to councillors.

Levels of Service

Keep it simple! An 'excellent-good-fair-poor' classification will serve most purposes. Involve the whole council.

What to look for

Those characteristics of the asset that impact service levels! Here is a simple, robust, asset assessment method - backed up by pictures of good, fair, poor conditions as we saw in SAM 215.

Road Asset	We look for: •Cracking •Shape Loss •Pavement Defect •Surface Texture •Capacity to carry traffic •Safety	surface condition 	pavement condition 
Pipes	We look for: • Blockage history • Breakages • Age and terrain • Pipe/soil matrix • Criticality • Capacity		
Buildings	We look for: • Services condition • Aesthetics • Structural condition • Capacity • Functionality		

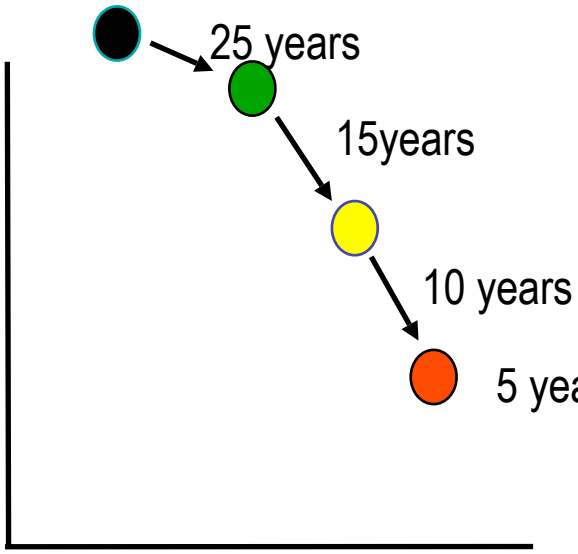
Constructing Service Consumption Patterns

Step 1. **Document a method to define levels of service,**
keep it simple and involve the whole council

Step 2. **Develop the block of costings, include maintenance.**

	Capital Renewal/Upgrade	Maintenance
	$75	$5/year
	$30	$2/year
	$20	$1/year
	$0	$0/year

Step 3. **Develop the Asset Service Consumption Model**. This is the timespan, based on local knowledge, asset utilisation and wear and tear for the asset to move from one service level to next. It must be noted that some assets and hierarchies may progress quicker than others due to useage, technical obsolescence or other factors like demand.



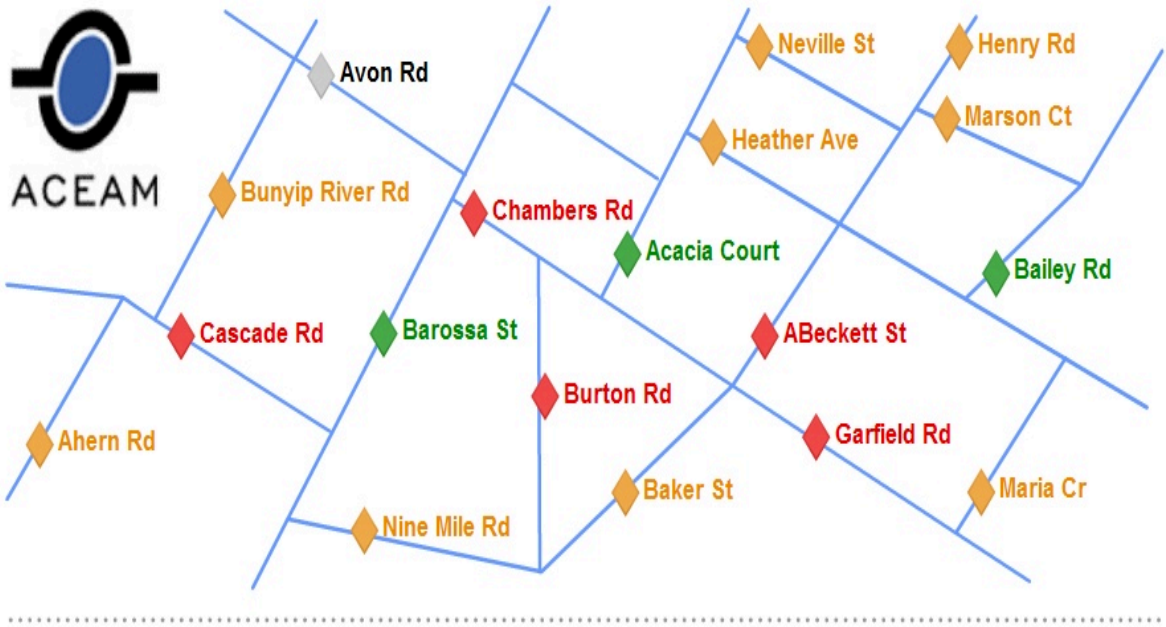
For this asset hierarchy, it takes 25 years to move from 'excellent' where there is no need for renewal/upgrade and no maintenance required to 'good', a further 15 years to 'fair' and 10 years to poor at which stage there is only 5 years left to the end of life - and maintenance has reached $5 per year (see Step 2 above)

These life spans are determined by 'on the ground' assessments with field operatives, and confirmed by users within the organisation.

Using limited funding to get best results

Here is where using service levels gets really interesting.

Let us take a simple example. Consider the schematic below. Avon Road (black) has just been rehabilitated. It is in excellent condition. Acacia Court, Bailey Road and Barossa St (green) are in good condition; Chambers Rd, Cascade Rd, Burton Rd, ABeckett St and Garfield Rd (red) are in poor condition. The others (yellow) are in fair condition.



From the costings developed in Step 2 on the previous page we know how much it will cost to bring each of these assets up to 'as new'. From this we can calculate the total cost of bringing all assets up to 'as new' - and how much it costs in maintenance for their current service levels. That is it will cost $705 to bring all assets up to 'as new' and it currently costs us $46/year to maintain them.

Capital	Maintenance
5 x $75 = $375	5x $5 = $25
9 x $30 = $270	9 x$2= $18
3x $20 = $60	3 x $1 = $3
Total = $705	Total = $46/year

In reality, we may only have a fraction of $705.

Suppose our budget was $150. Where we spend this $150 will determine what our network looks like next year, the next 5 years....

How do we budget?

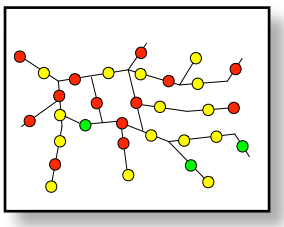
How do we develop a Capex program?

See demonstration on next page to see how you can make your limited budget work for you

Spending a Limited Budget

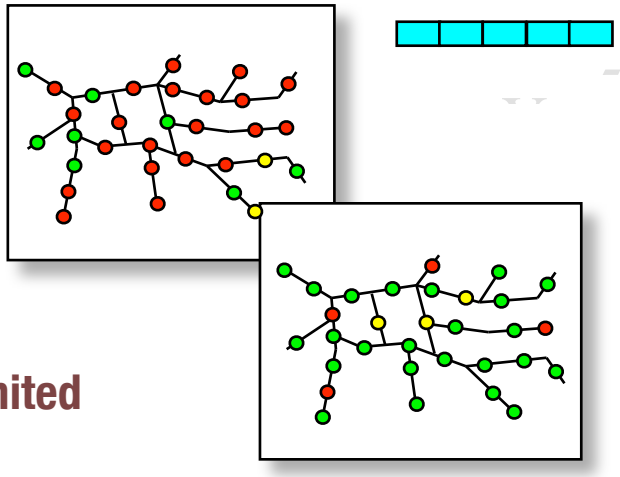
With $150 you can manage to bring up two ‘poor’ assets; OR five ‘fair’ assets; OR 7 good assets (with some budget left over) - OR, some combination of the above.

How do you make your choice? worst first? best first? according to political priorities? What difference does it make? Every asset we renew can be improved, but every asset not renewed has the potential, of course, to move to a lower category.



Using a somewhat simplified model (just red, yellow, green and no blacks) and a few more assets in the network, Ashay illustrates the impact of two different choice mechanisms. Same starting position, as shown here, but making different choices.

As you can see, after 5 years, a different set of choices leads to a very different outcome. In the top picture many assets have become red, whilst in the bottom picture, greens dominate.



Let us apply this process to our limited budget situation

We start off with the following
$705 Infrastructure Gap
Maintenance Budget = $46/year

Method 1:
$1,324 Infrastructure Gap
Maintenance Budget = $75/year
Very high depreciation

Method 2
$372 Infrastructure Gap
Maintenance Budget = $42/year
Very low depreciation

Same Budget, but

Wrong choices can greatly worsen the situation,

whilst

Good choices greatly improve the situation

Just in Time

With a knowledge of remaining service life, choices can be made that maximise the benefits achieved.

This is good, but we can do even better!

How to reduce your infrastructure gap

(with no capital or O&M expense)

Does this seem impossible?

It isn't. Infrastructure Gaps are traditionally calculated as the cost of bringing all assets up to an 'as new' standard.

But when you take a service centric approach you realise that not all of your assets need to be at 'as new' standard to do the job that they need to do.

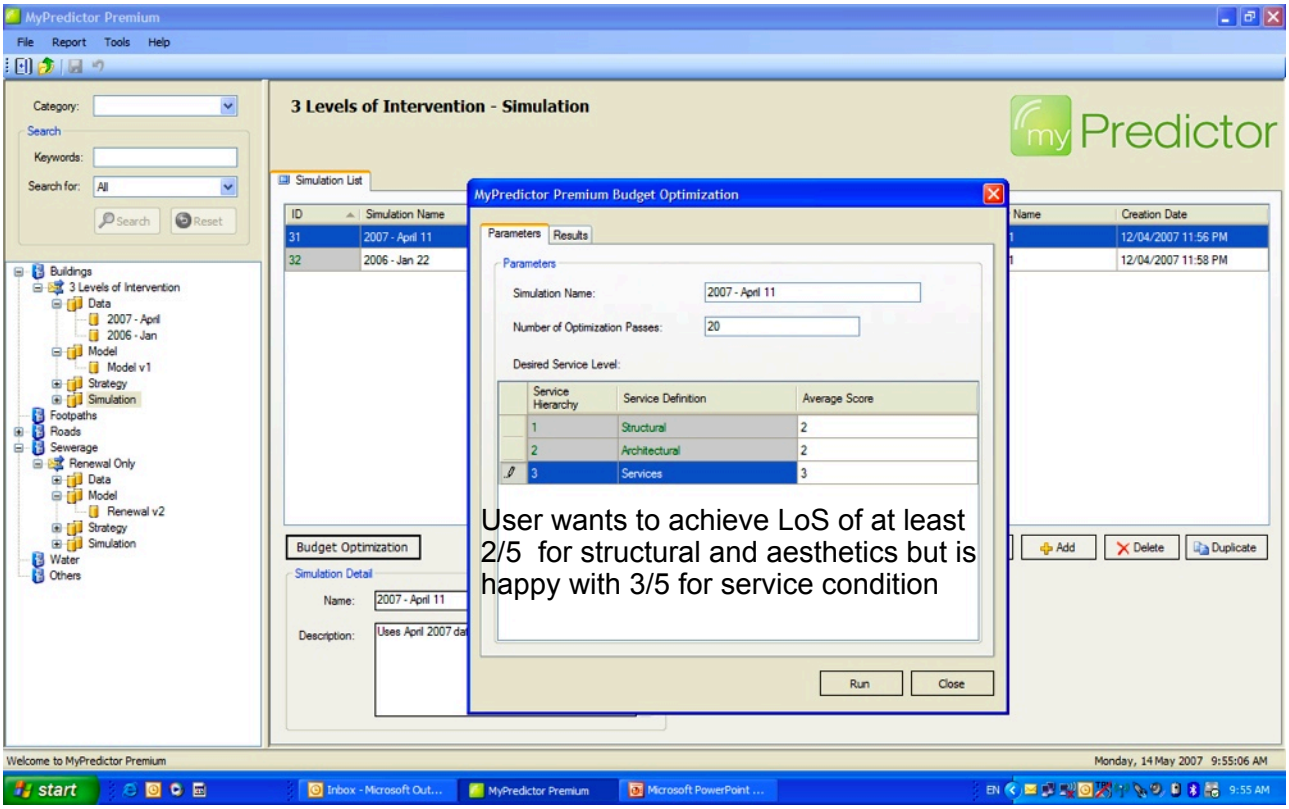
First you define your service criteria.

Then you determine what LoS you wish to achieve.

Ashay Prabhu has developed "MyPredictor" which will predict:

- Funding to achieve the desired LoS
- Future LoS if this funding was not available.
- 25 years Capex Plan for each desired target LoS
- Total Life Cycle Annuity for Pricing the true cost of service delivery

You can set your target LoS to meet different levels for different aspects of asset condition, as suits the service level that you wish to achieve, see below.



Do you Know?

How can you reduce your Infrastructure Gap (with no capital or O&M expense)?

How can you increase your asset value and reduce your maintenance costs by the way that you spend the budget that you have?

How can you demonstrate the effect on asset value and maintenance of insufficient budgets?

How you can find out how much it will cost over the next 5, 10, 15 years to

keep providing the same level of service

provide a different level of service?

What would happen to the network/portfolio service, condition and capacity if:

You spent less money or more money.

You spend your funds differently to what you traditionally have.

You trade-off our funding between different hierarchies.

How to present information to Stakeholders in a way in which they will understand and support you?

You have all sorts of assets providing a range of services - water, sewer, buildings, parks, roads etc. **How do you equitably allocate individual service category funding from a global funding bucket** - how much do you spend on water as opposed to roads for example and why?

For a set level of service, can you determine a future funding cashflow need including operations, maintenance, renewal and disposal, alongwith the initial acquisition costs? If you can, then you know how much to charge the current rate-payer to pay for these services over their life - intergeneratinal equity. Predictor determines these long terms funding cashflow models for a range of service levels.

Answers to these and other questions about taking a service focus may be found in this issue. But if your question is not answered, you are welcomed to write me at **info@amqi.com** and Ashay Prabhu and I will do my best to answer them.

You may also like to look up the ACEAM website at **www.aceam.com**