AMQ INTERNATIONAL
STRATEGIC ASSET MANAGEMENT

Issue 228
November 5
2007

For Practitioners, Policy Makers and Planners in Public Infrastructure

PERFORMANCE FUNDAMENTALISM

How to avoid it

Fundamentalism is just as unattractive and counter-productive in Asset Management as it is anywhere else. How can you avoid that "I'm sure I'm right and I'm not even going to consider anything else" attitude?

In this issue we show how a blind adherence to one principle, one performance measure,or one section of an organisation as if it trumps all others, will ultimately lead to very poor outcomes. Systems thinkers will have no doubt recognising this as the principle that optimising a subset will inevitably de-optimise the whole.

So how to avoid? Step 1 is to recognise that there is no ONE principle or ONE performance indicator that will serve, or that you can follow unthinkingly. Life - and the purpose of asset management is to serve life - is a matter of trade-offs.

Step 2 is to embrace diversity. Recently we introduced the notion of 'accountineering', learning the thought patterns of your colleagues, but contributing your own skills and knowledge. We also1 introduced Star Ratings, a system based on the understanding that many criteria contribute to success.

But still I come across strong minded individuals who want to impose unworkable principles on their fellows, hence this issue.

Inside

Editor: Dr Penny Burns, AMQ International
PO Box 75 Salisbury South Australia 5108
Telephone 61 (0) 8 8281 5795
Email: amqi@amqi.com

Fundamentalism & Depreciation

There is perhaps no greater area for conflict in asset management than the appropriate treatment and measurement of depreciation. So let us look at a predominant theme, today:

"We should all pay our own way, no more and no less".

This sounds pretty good until you realise that *taken literally and to the extreme, t*his purist approach would mean that we would lose the service of almost every asset we currently benefit from!

Consider an asset with an expected life of 100 years that is now 60 years old. If all users paid for *their* use each year (1/100th) in 40 years time when the asset needs renewal, cumulated depreciation would amount to only 40% of the total - *given that we cannot make these decisions retrospectively.* Unless we now borrow the difference (and charge consumers for the interest and eventual debt repayment) or raise rates, the services of these assets will be lost to the community. That is, a strict 'user pays' system can only work if it is (a) started from day 1 and (b) we know with certainty what the life span is, so that we don't over or undercharge. But is this knowledge really possible, for assets that have expected lives in the order of 40, 50 or 100 years or more? Do we know the future that well? Clearly not. Hence the alternative position:

"We should pay only what is needed, no more and no less"

This is the practice advocated by such practitioners as Ashay Prabhu. Recognising that long lived assets are only long lived because we continually intervene with some life extending action (e.g. reseal, heavy patch, rehabilitate), that the periods between interventions vary according to the treatment choice, and the residual value of the asset at the time of intervention is, in fact, related to the choice as well. it is possible to draw up a schematic that looks something like figure 1. By charging a depreciation rate based on the financial needs of the asset at the next intervention point (and having chosen that point and the nature of the intervention to provide the level of service the community desires) funding for life extension is assured - and at the same time we avoid either over or undercharging for the need at hand.

Now this will inevitably mean that some cohorts of users will pay rather more depreciation and others rather less. This violates principle A above.

So it seems that we have (at least) two positions:

The first is fair and equitable - but it doesn't get the job done of funding ongoing services from the asset and

The second gets the job done - but it is not fair and equitable.

The point is that there is no ONE practice that can do both jobs - assuming that we will always be in the middle rather than the beginning of our portfolio's life cycles.

So what consequences can we live with?

If we choose Fairness and Equity - we risk losing the asset services

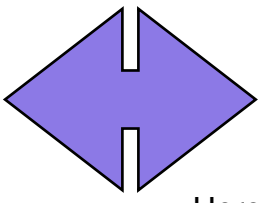
If we choose Service continuity - some will pay more and some less

My own view is that this is what the American's call a 'no-brainer': the role of asset management, after all, is to provide the service that the community requires, at the level it needs and is prepared to pay for. If we don't provide the service, we are not doing our job. It's as simple as that. However, there are other aspects at play here - when positions clash there nearly always are!

In terms of efficiency we not only wish to provide service continuity - but to do so at the lowest possible cost. The more we know about the asset, its condition, the service, what the community wants and is willing and can afford to pay for, the better choices we can make to secure that lowest possible cost. Decisions which are a relatively short time into the future are known with greater certainty and in greater detail than those that are farther off in time - lending themselves to better costing.

In terms of equity and fairness, too, the second proposal - pay what is needed - has certain positive aspects, too. Users use many services and the assets that provide these services are many. Some will be relatively new systems, some old. To some extent, then, there will be a natural evening out - *across all services.*

My thanks to David Hope of Skilmar Systems for discussions on these points.



RATE OF RETURN

Here is an example of fixating on just one performance measure.

In 1994 I ran a series of 'backpage competitions' where each of the situations offered for analysis were *real life examples*. This was the first of them. The Engineer told me the story.

Life Extension - Should we or Shouldn't we?

(A TRUE STORY - only the names have been changed to keep me out of trouble.)

> George Netherby, the Chief Engineer at Clena Waterways was delighted. The new cathodic protection results were excellent. For only $100m, the bulk of the agency's pipelines, which were about 40 years old, could have their expected life doubled - from 80 years to 160 years. Triumphantly he took the new results to Anna Burnside, the agency's Chief Accountant and suggested that a budget submission for the $100m be submitted forthwith. Anna did not share his rejoicing. She explained that with the cathodic protection the asset values would increase from their current value of $2 billion (50% remaining life X $4 billion) to $3 billion (75% remaining life X $4 billion). "Great!" said George, beaming. "Not so great!" replied Anna. You see, although you will have extended the life of the assets, it will not result in any more in annual net revenues, so that my 'rate of return on current assets' the key performance indicator for this agency, will decline. Sorry, George, it's not on!"

The readers task was to assume that they had been called in to advise. You may like to do the same. What would you say to George and Anna?

This attracted quite a number of responses. An honourable mention went to Phil Giltinan and David Mitchell whose entry began

> "In summary, we would fire the accountant and *change the performance indicator (*on second thought, given the new Federal Government IR Regulations, it might be easier to promote the accountant!)"

There were two winners - one for substance and one for style! See what you think. Bob Richie's response was as follows (slightly edited):

> George Netherby's proposal is to spend $100 million now in order to avoid spending $4000 million in 40 years time.

Question 1: What is the alternative?

> I suggest we compare this with an alternative in which the $100 million is invested for 40 years and the $4 billion spent on renewal at the end of that time. Working in constant dollars, the range of real interest rates and the cumulative interest accrued for each is given below. The table shows that for real interest rates less than about 10%, investment in the cathodic protection is the more profitable than investing it.

5%	6%	7%	8%	9%	10%
$740m	$1029m	$1497m	$2172m	$3141m	$4526m

Question 2: How sure are we of the figures?

> The relationship between future value and the assumed rate of interest for the period is apparent in the table. This begs the question of the reliability of some of the other assumptions: such as whether the pipes, without the cathodic treatment, would last the 40 years (or somewhat longer or somewhat shorter). For example, if the pipes would have lasted 50 years, rather than the assumed 40, then it would be best NOT to invest in the cathodic

protection but rather to invest the money, as long as the rate of interest was less than 7.5%. On the other hand if the pipes were to need replacing at 30 years, the cathodic protection would be a good investment at any reasonable interest rate.

Therefore, if George has correctly represented the time at which replacement of these pipes will be economic, and if the real interest rate for the period will be less than 9.6% (real) on average, then the proposal appears to be economic and it should be compared with other investment proposals, for decisions on which investments occur.

Question 3: Will the Rate of Return fall?

We now consider Anna's view that the increase in the value of assets will decrease the rate of return on assets, the agency's key performance indicator.

The value of the asset base will indeed rise. However, all other things being equal *it will also reduce the annual depreciation.*

Without the cathodic protection, the $2 billion value of assets amortised over the remaining life of the pipes, 40 years, would yield an annual depreciation figure of $50 million. But with the cathodic protection, the now $3 billion value of assets is amortised over the now remaining life of the pipes of 120 years, yielding an annual depreciation figure of $25 million. *Thus net profits increase by $25 million.*

Any investment of $100 million that yields an annual return of $25 million is not to be sneezed at! Only in the event that Clena Waterways was already achieving a rate of return in excess of 25% would the overall rate of return actually fall!

Question 4: Is the Rate of Return an adequate measure of performance?

Independent of the question of whether the $100 million is invested in cathodic protection, one should also query the wisdom of relying on the rate of return as the sole performance measure. Consider this, depreciation remains constant in real terms over the life of the asset (unless the asset is 're-lifed') but the asset value itself declines over time by the cumulative amount of depreciation. So, *even if revenues remain constant,* this will show up *as an increasing rate of return*! [Revenues (constant) - Depreciation (constant) / Asset Values (declining)]

NB: the effect is even greater if you are recording revenues in dollars of the day but valuing assets at their depreciated historic cost! (This may be why there is such pressure to retain historic cost - it doesn't help you to 'do good' but it certainly makes you 'look good')

Observation: On this point one can't help thinking of Mao Tse Tung! In 1966, at the age of 73, Mao, who had been a swimmer in his younger days, keen to demonstrate he was still as fit as ever, jumped in and swam a length in the Yangzte River. The government newspaper reported, breathlessly, that he had covered the distance at the rate of 8 km an hour. But a foreign newspaper observed drily that the swim was all downstream ('and he was over taken by his rubber duck!'). In Asset Management we should be sure to take the current into account when calculating our performance.

Humour Helps

Sometimes a satirical approach can work wonders where rational argument fails. (that is why cartoonists can get away with things that analysts dare not say, and why a simple picture can make a point where a thousand words would miss!) Here is David Gabriel-Jones take on the Clena Waterways problem. He provides three options.

Advice to George and Anna

1. Dump the cathodic protection and install state of the art anodic destruction technology, which will corrode the pipelines away in 20 years. Their residual value will halve, Clena's rate of return performance indicator will enjoy a spectacular rise, and George and Anna will both get big bonuses.

2. Go ahead with the cathodic protection. 40 years ago Clean Waterways built the pipelines with capital borrowed from the World Bank. The loans runs for 80 years - the projected life of the asset. Clena's consumer charges have been set to cover the capital and interest repayments. Now that the loan can be restructured over a much longer period, it can be readily demonstrated that consumers have been grossly overcharged. George and Anna should take the story to the media. The Minister for Wet and Dry will be forced to resign, the consumers will all get a windfall cash reimbursement, and George and Anna will be elected to Parliament on a tidal wave of popular acclaim.

3. Clena should enter into a sale and leaseback arrangement with Mega National Investments. Mega National will purchase at valuation ($2 billion), install the cathodic protection ($100m) then on-sell the asset to Ultra Global at its revised valuation ($3 billion + $100 million). Mega National's profit will be $1 billion,of which a mere 1% ($10 million) will fall due to George and Anna as their consultancy fee. They can run away together and live happily ever after in a villa in Majorca.

Wow! And this was all long before Macquarie Bank! I am sure that you will all have great fun disentangling the false clues, assumptions and conclusions in this little lot.

Are You or Anyone Around You Captured by a Fundamentalist Attachment to one ratio or principle above all others?

I am still confronted by Public Sector Managers who, for example, labour under the constraint of a fixed debt: income ratio

- and thus miss all of the advantages of using debt itself as an asset management tool by raising rates to pay off existing debt at a faster rate ahead of major renewal expenditure thus (a) smoothing the path to the even higher rates that will be needed to manage the renewal and (b) creating future borrowing power for when it is needed. Conversely, when approaching the peak of asset renewal (when you can see that the increased need for expenditure will start to ease in about ten years time) you can borrow to avoid raising rates too high. None of this is possible with the constraint of a fixed debt:income ratio.

What about the plight of the Education Asset Manager with hundreds of surplus computers that he could not dispose of when they became obsolete because they had not been 'fully depreciated' .

What examples come to your mind? I would be interested to hear them.

Corporate Performance v Section Performance

Just as fixating on one aspect can destabilise and lead to lower overall outcomes, so can our current trend to setting up 'business units' within an organisation, with the focus on the health of the unit, not the health of the whole. This is a problem for all levels of Government as well as the private sector. The requirement to provide asset plans, (or documented business cases for asset proposals) is only effective if the plans and cases are actually examined for relevance and accuracy.

Councils and other organisations might benefit from adopting a similar procedure to IPART, the NSW regulator for water and other utilities.

First, they impose an obligation: namely that in carrying out its operations, Sydney Water must ensure that its assets are managed consistent with, amongst other things 'the lowest life cycle cost and acceptable risk of the Assets; the whole of life of the Assets; and its assessment of the risk of loss of the Assets, and capacity to respond to a potential failure or reduced performance of the Assets'.

Second, they require reporting on the state of each group of Assets managed by Sydney Water, and the report must include the following matters:

- a description of the processes, practices, systems and plans Sydney Water uses in managing the Assets;
- a description of each group of Assets;
- an assessment of the expected capability of the Assets to deliver the Services and meet the existing obligations consistent with this Licence, the Customer Contract and all applicable laws with which Sydney Water must comply;
- an assessment of the major issues or constraints on current and future performance of the Assets;
- the strategies and expected costs of future investment in Assets;
- progress in implementing the management of Sydney Water's Assets and any recommended improvements in processes, practices, systems and plans for the management of the Assets; and
- such other matters reasonably required by IPART.

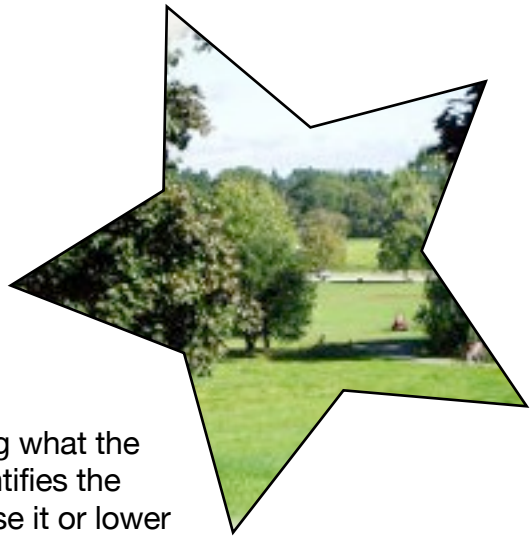
Third - and most importantly! - they follow up. At least once during the licence period, IPART will audit all of the water authorities for which it is responsible. This will normally entail the use of auditors external to IPART and to the authority.

This is a practice that any organisation could well take up. It could well be the principle role of the Strategic Asset Manager to ensure that the reporting was done and was checked. *(Note: some 20 years ago, internal audit would often provide this role - being familiar with the corporate objectives would be a great help in ensuring that individual business units meet the needs of the corporate whole.)*

Sydney Water has a well established process for the production of documented business cases which are thoroughly reviewed by a section outside the proposing section. What procedures are in place in your organisation to ensure that business cases and asset management plans are reviewed in the light of the overall corporate need?

STAR RATINGS FOR OPEN SPACE

How do you know when you are successful?



Glen Fensom, Asset Manager, Parks, Bushland and Open Space, Maroochy Shire, asks "As individual professionals how would you measure if a recreation park or other open space is a success?

The service approach starts by quantifying and qualifying what the recreation parks services provides to customers. It identifies the whole life cost required to maintain a level of service, raise it or lower it to an identified level.

The model

Those of you who have followed the star ratings work in recent issues will know that the star rating measures and quantifies the performance of the asset on a 1 to 5 scale utilising a range of appropriate criteria under the headings - external impacts, comfort, accessbility, amenity, 'usability'. These are then weighted.

The trick is to

- create a set of general classifications that can be applied reasonably uniformly over all the assets (and non-asset) categories in your service portfolio.
- investigate and measure the most appropriate criteria
- weight them

Here, to show you that the star rating process works as well for 'green assets' as it does for 'brown assets/buildings', are the criteria considered under the heading of '**external impacts**'

- positive and negative impacts on regional biodiversity
- water and energy sustainability
- contribution to surrounding amenity
- impacts on broader land and water systems

If you would like to see the developed criteria for comfort, accessibility, amenity and usability - then join our **Star Ratings Interest Group** - available to all SAM subscribers - and you will be able to access the work of Glen Fensom that we have just uploaded.

But wait there is more!

Due to the importance and cost of key facilities such as playgrounds, water bodies and skate facilities; Star ratings have been developed for these individually.

Our Star Ratings Interest Group is increasing every day. Why not be part of it and contribute your ideas, questions, examples? It is a practical way to move forward on the key question of performance.

If you would like to be included - write to me at info@amqi.com and send me a short (about 50 words or so) introduction of you for the rest of the group - i.e. where you are, your role, and what your particular interest is in star ratings.