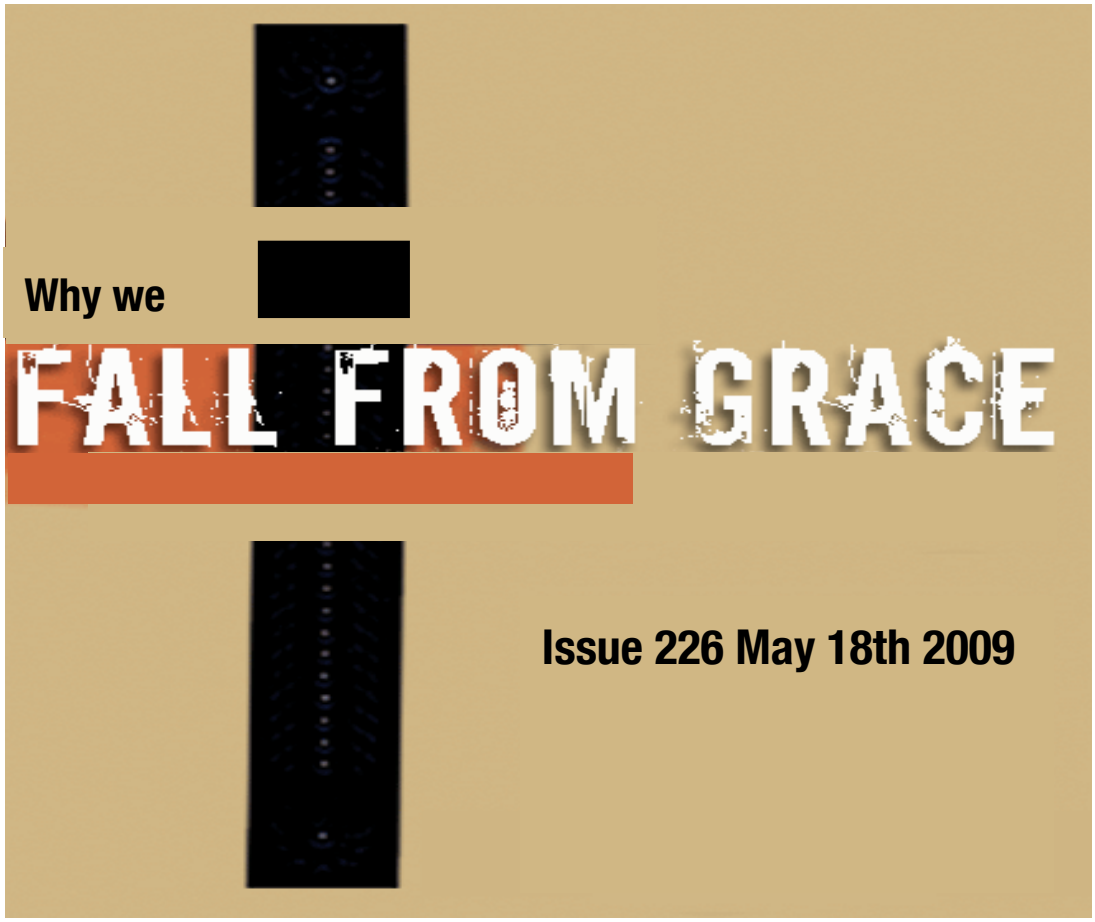
AMQ INTERNATIONAL
STRATEGIC ASSET MANAGEMENT



Observation bears out a sorry state of affairs - namely that many organisations make great strides with asset management only to find that, some years later, they have fallen from the path of righteousness and need to start again.

In this issue we explore some of the reasons why this happens. And in future issues we will look at some of the things that you can do to prevent it happening to *you*.

Also in this issue

Editor: Dr Penny Burns, AMQ International
PO Box 75 Salisbury South Australia 5108
Telephone 61 (0) 8 8359 0559
Email: amqi@amqi.com Website www.amqi.com

Why does the AM process stall?

There are the reasons we see and those we don't. Moreover those that we can easily see are most often not the real causes of the problem but rather symptoms of more serious, but unaddressed, underlying problems.

'Easily Seen'

- The asset manager who is leading the charge leaves and the team's forward thrust is de-railed.
- New guy comes in and insists on things being changed 'his way'
- Senior management lose interest and are more concerned with the latest 'new project'
- Insufficient funds are forthcoming to do the job properly. Senior management are 'all talk and no action'
- New ways of doing things are gradually subverted by those trying to preserve the mainstream culture.

Looking behind the obvious

Seen: The asset manager who is leading the charge leaves and the team's forward thrust is de-railed.

Underlying: Failure to establish an asset management 'culture' in the organisation.

Any organisation where the asset manager is a 'one-man-band' is in a weak and vulnerable position, no matter how good he is or how enthusiastic. The first task of the enthusiast must be to sell the rest of the organisation on the value of asset management *as a way of doing business*. Unless others in the organisation can see the benefits of the new asset management approach *for their work,* enthusiasm for asset management will not outlast the current incumbent.

Seen: New guy comes in and insists on things being changed 'his way'

Underlying: Asset management treated as a 'technical fix' rather than a way of organisational life.

This is related to the culture issue above. If asset management is seen as a 'technical fix', i.e. an asset information system, then any new player with clout enough to change the 'system' to a 'better system' (more normally, one with which he was familiar in his previous organisation) will win. Many organisations who think that they have spent ten years in asset management, have actually spent two - five times over!

Seen: New ways of doing things are gradually subverted by those trying to preserve the mainstream culture.

Underlying: If poor practices persist, they do so because they somewhere they are providing benefits to those involved.

In a paper entitled 'Nobody ever gets the credit for fixing problems that never happened: Creating and Sustaining process improvements' Repenning asks "What are the effects of cost cutting on maintenance?"

When critical equipment breaks down, it must be fixed. Resources are redirected from preventative maintenance, training and investments in equipment upgrades towards reactive work. Maintainers are rewarded for heroic efforts to bring plant back on line.

However, the drop in planned maintenance eventually causes breakdowns to increase. Management reassigns more technicians to repair work. Breakdowns then rise even more. As uptime falls, operators find it harder to meet demand and become less willing to take equipment down for scheduled maintenance, leading to more breakdowns and still lower uptime. More breakdowns simultaneously constrain revenue by lowering production and increasing costs. There is also an increased safety risk due to the hazardous nature of outages and the risks posed by uncontrolled equipment failure. Lower uptime erodes a plant's ability to meet delivery commitments and so on …. (this example and the next comes from the ICOMS 2009 paper referenced on page 5.)

Seen: Senior management are more interested in the latest 'new project' and cease to fund AM adequately.

Underlying: Asset management seen as a 'project' rather than an ongoing program.

This is often the result of presenting AM as itself a project. Projects differ from programs in that they have a definitive end. If AM is seen as a project then the expectation is that expenditure on it will come to an end. It is a fundamental mistake NOT to build in ongoing resources. Consider the following case:

> The organisation served over 11 local municipalities with a serviced population of over 680,000 via a water main network of over 2,400 km of pipes of various materials, ranging in age from just installed to over 125 years. In the late 1980s the Regional System experienced a sudden increase in water main failure rate and realised that it had to improve its limited knowledge of the physical integrity and hydraulic conditions of its system. A major study recommended databases be constructed containing geographic, geometric, physical characteristics, soil properties, and historical pipe break data, at a projected cost of C$1.8m.
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> The region did not have this much to spend so the Engineering Division decided to develop them by making use of internal staff part-time and hiring a university student to work full time on the project. *A lot of enthusiasm was developed at this time and staff put in extra hours on their own to do what was clearly not only needed but an innovation for the area.*
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> In 1996 it completed five major databases containing over 450,000 fields of data on pipe, node, pipe break, fire flow, and soil characteristics. The databases were integrated into a relational database management system and added to the Regional Geographical Information System. This enabled them to take advantage of latest research and apply a German developed forecasting

model that had the advantage of being able to analyse large amounts of data. *The software was provided for free.*

The region then integrated its water replacement and road replacement programs. *This was highly regarded as it saved about 50% of costs and reduced disruption to users to a minimum.*

It was at this stage that the program won an award in the International Asset Management Competitions and came close to taking out the overall prize. The award was presented at a special council meeting (broadcast on cable TV!). Things were looking good. Yet not much more than a year later, came the following email from the disillusioned developer of the system.

"I established the city's main database, but keeping it up-to-date and quality controlled is a problem. This is not a financial problem - we have the budget; rather it is a people problem - the technicians or students assigned to updating data get easily bored as it is a very tedious job. Because of this, it requires a lot of time to perform quality control checks to ensure quality data. I used to do quality checks, but no more. The reason for this is that I notice that senior management has little appreciation for the work, so why in the world should I spend my time doing something that is time-consuming and not appreciated? After all I am an engineer who likes to optimise operations. Why not optimise my time!"

From the viewpoint of the organisation itself it is not difficult to see how this situation may have been interpreted: (1) we had a problem with water replacement *and it has been fixed.* (2) We are now *'world's best practice'. (with the implication that we now don't have to do any more)* and (3) Asset Management was a project and the project is now over.

Many of us are prepared to do more than the tote odds to get established a good system that we can be proud of - but if the organisation does not know how much it will cost to maintain the system in this condition then why should they provide ongoing funds?

Asset management is frequently - and mistakenly - 'sold' to Senior Management as a "once off" expense of getting the right asset information software. When ongoing funds fail to materialise, it could be because they were never planned to be there

Seen: Senior management 'lose faith'.

Underlying: Misunderstanding of the time frame of results

Costs show up straight away but benefits take time to come to fruition. Unless management are prepared for this, they can pull the plug too soon. In "The Hare and the Tortoise" in SAM Issue 1, I cited the case of the Rover Group in the UK who made asset management improvements. In Year 1 there was a net cost, in Year 2, zero return, in Year 3 a small return and in Year 4, it took off! There was a major 39% increase. It would have been easy for an organisation with a short run focus to have stopped too soon.

SAM 267 will feature a case study of Cessnock City Council and its approach to designing a consulting brief for a major asset management overhaul. And in future issues I would like to bring you other good ideas to maximise your chances for success.

Your ideas and contributions welcomed!

This brings us to the question:

Is Planning an Unstable State?

In maintenance theory, Ledet, who studied many manufacturing firms, distinguished a number of maintenance domains - Reactive, where organisations wait for something to happen and then respond; Planned - where they have engaged in activities that help them anticipate events and prepare ahead of time to avoid surprises; and Reliability (or Embedded) - where they engage in planned pro-active work. What Ledet theorised was that the "Planned" state was unstable. Organisations either worked their way through it to the Reliability state or they fell back to the Reactive.

Melinda Hodkiewicz, University of Western Australia suggested this could also apply to Asset Management. I was intrigued by this idea and, together with Ruth Wallsgrove (United Group, Rail), Melinda and I explored whether the Planning Stage in Asset Management is indeed also unstable - as anecdotal evidence suggested it could be. Our joint paper "Asset Management - a Game of Snakes and Ladders?" is to be presented by Melinda at the forthcoming ICOMS conference, Sydney, in June, where the idea has also given rise to a plenary session.

What do we do in the initial asset management planning state?

Typically we gather data on our assets and implement life cycle modelling and our first task is projecting the likely cost and timing of asset renewal. Now in this initial stage what do we really know about our assets' real life cycles and what do we really know about what services and service levels are desired by our communities or customers? The actual truth is that until we do the research, we know very little, close to nothing! In our initial asset management planning stages we must use generics. Generic life cycle data derived from the way that others have operated similar assets. Generic service levels derived from either our best guesses of our communities or studies done by others on their communities.

That is, in the initial planning stage we are using mythical figures. True, it is a lot better than the absence of figures we had before, but still the figures are not 'ours', they haven't been derived from 'our' assets or 'our' communities.

Organisations can use this information to move through and up to the next stage - developing their own relevant service levels and adjusting the management of assets to produce these service levels most effectively and at minimum cost. This is the equivalent of the "Reliability" domain that Ledet refers to.

What happens to organisations that do not 'move through and up'?

Their asset management forecasts come to be seen as irrelevant. Asset renewal is seen as an expense rather than an essential means of providing needed services. This is the stage where Councillors and others complain that 'asset management is getting in the way of what we need to do'. At this stage, support for asset management wanes and the organisation reverts to reactive mode.

You may not think that you are doing anything wrong, but

Poor Quality Valuations can lead to Audit Qualification... and poor Asset Management

In his latest newsletter David Edgerton, APV, draws attention to some poor quality valuation practices:

· Not componentising every complex asset subject to valuation. For example – setting a revaluation threshold of $10,000 but only componentising those assets over $500,000.
· Assuming a constant pattern of consumption (straight-line) without giving due consideration to the reality of the asset's lifecycle and how its future economic benefit is consumed over time.
· Assuming a Residual Value of NIL as a default without giving due consideration to its true Residual Value.
· Basing the calculation of WDV and Depreciation on factors other than those that drive the consumption of the asset's future economic benefit.
· Lack of sufficient and appropriate evidence to support critical assumptions such as Pattern of Consumption, Useful Life, Residual Value and Gross Current Replacement Cost.

The consequences of adopting these non-compliant practices include –

· Inaccurate and misleading information used to produce Asset Management Plans and drive budgets
· Increased costs of data collection because the valuation exercise fails to gather condition data and other essential information used for Asset Management Planning
· Failure of the council to satisfy its public accountability requirements
· Poor Corporate Governance driven by poor or misleading information
· Additional valuation costs incurred as work has to be re-done in following year

To avoid these risks and extra costs councils are recommended to –

· Obtain a detailed copy of the methodology and assumptions
· Review the methodology in detail and assess for compliance with the AASB116 and UIG 1030 ensuring it does not exhibit any of the practices detailed above
· Obtain a "guarantee" that the valuation will pass audit (external valuation) or consider engaging an external expert to undertake a Peer Review of the valuation (in-house valuation)
· **Ensure that the information provided by the valuation can be used by other council staff for Asset Management purposes**

APV has developed a Pre-Audit Checklist which can be accessed from the Registered Users page on their website (www.apv.net). Access to this page is free.

Are you being heard?

"It is nearly impossible to make it through a typical day without exchanging ideas. Whether deciding on something as simple as a restaurant for a long overdue night out, or as complicated as the design of an entirely new product, we are forever involved in sculpting and selling our creative thought. Conventional wisdom says that to be successful, an idea must be concrete, complete, and certain. **But what if that's wrong? What if the most elegant, most imaginative, most engaging ideas are none of those things?**"

Matthew H May's words are provocative. (To read more, Google him - the article is called "Creative Elegance.. the power of incomplete ideas). His argument, in brief, is if what you want is for people to think about your idea, add their own interpretations to it, turn it upside down and inside out if necessary, give them something to work on. An incomplete idea can be an intriguing puzzle. A complete idea serves to shut the door on further discussion. So if you want to create a buzz of excitement, say for the introduction of major asset management change in your organisation, start the ball rolling - but don't say everything! A complete idea in this case can be seen as a threat. In general, people don't resist change as such, just change that they don't have a say in - so give them a chance to have their say.

Or tuned out?

Bob Ritchie, Human Resources Trainer and author of "A Practitioner's Guide to Experiential Learning" observes

"When people think of communication, their first thought is about language, I suggest another matter needs to be considered: t*he sort of evidence and argument* considered primary for each of the disciplines under consideration. If you consider economics, for example, and leaving the mathematical and experimental outlying edges of the discipline aside, you might think of modelling, based on stated assumptions (no doubt including the assumption of 'rational' agents) and rational argument. Economists like to think there is evidence of cause and effect in their modelling, sometimes bringing the notion of 'lags' into consideration. Engineers are a different kettle of fish. Their use of numbers is more precise: they try to generate numerical answers with a high degree of accuracy and reliability, in the sense of certainty. The notion of cause and effect between physical objects is extremely important to them. They are often uncomfortable with the Economist's use of assumptions. Political 'scientists' are very different. They focus on beliefs and perceptions. Their style of argument seems 'looser' and any reference to cause and effect is as much statement of hope than anything else. (leaving to one side Asimov's theory of psychohistory developed in the 41st century)." What is a compelling argument for one may be less than compelling for another. Can you argue your case according to your listener?

And more on communication!

The London Underground Map

When it comes to elegance, the London Underground Map is a winner. And it bears out Matthew May's notion that the most elegant ideas do not have to be complete. In fact, it was Harry Beck's recognition that, if you were underground, relative distance meant very little, the most important thing was to know which stop was next to which. In fact the Underground Map is not so much a Map as a Diagram - and the more functional for that. By leaving out the representation of distance, Beck was able to give more attention to the detail of the city central.

This week's "Thought for the Week" on the www.amqi.com website is a fascinating short BBC video on the history of the London Underground Map.

What can you ***leave out*** to gain more clarity and functionality?

On this matter you may also like to revisit the schematic diagrammatic representation of its assets produced by Hamilton City Council in SAM 184. Less is more.