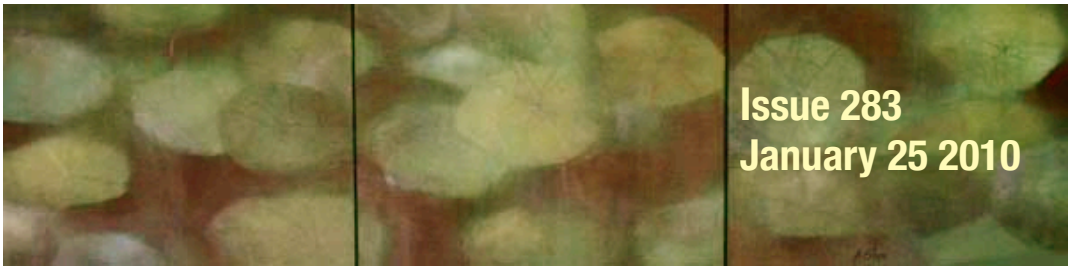
AMQ INTERNATIONAL
STRATEGIC ASSET MANAGEMENT



Last week a thoughtful reader challenged me on the purpose of the History Project.

What is the story that you are planning to tell, the writer asked. Is it the story of valiant individuals? Well rooted transformation? Progress limited by imperfect public policy and lack of long term optimisation?

It made me ask myself why do I care so much - and why should anyone else - including YOU!

Here is the answer I sent. See what you think. And have a look at our second organisational history - Sydney Water's Journey in Asset Management

Do consider, but above all,
Enjoy!

Penny

In the NEXT ISSUE, we will be doing a REGIONAL ROUND-UP - What's Up in the West? looking at what is happening AM-wise at State and Local Government Level, in the utilities, in academia and in the regulatory agencies - in WESTERN AUSTRALIA.

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What is the Purpose of the Asset Management Project?

(as *sent in response to a reader inquiry - section headings added here for clarity*)

Thank you for your thoughtful comments.

Seeking Understanding

My original reason for wanting to document the paths that AM has taken over the past 30 years was purely selfish - I wanted to understand it better myself. When I consider that *America in Ruins: The Decaying Infrastructure*, Choate & Walker, was published in 1981 and yet the USA did not act on it, but that the series of studies for the SA Parliament on Asset Renewal in 1986-87 led to the adoption of accrual accounting and an asset management movement across Australia many years before the same things happened in most other places, I ask myself, why? Why is it that AM has developed differently at different levels of Government, in utilities, in manufacturing? In different regions of the world? Why is it that in some places the charge has been led by finance, and in others by engineering? And are we gradually moving closer together or further apart? As I travel across Australia and overseas I discover really interesting techniques being used well by one jurisdiction and almost completely unknown by others. Why? And I see agencies that 15-20 years ago I would have rated as in the lead, fall back and have to rediscover what they once knew. Why?

Many changes, all for the better?

For about 20 years I was closely involved with just about every development in public sector asset management in Australia and many in New Zealand, including much of the policy making. For the last 10 years I have been more of an interested observer. I have been involved at a non-technical, strategic asset management level with a very wide range of public sector assets from hospitals to watermains to roads and nuclear power stations. Many of the standard asset management definitions - particularly of infrastructure depreciation - that are now seen around the world, I invented because they did not exist when I began my studies. I have seen so many changes, and they are still occurring. I would like to think that all the changes are for the better and that asset management will grow stronger as time goes on. *Perhaps this is more likely to be the case if we encourage thoughtful reflection on where we have been?*

A History of Ideas

So the history I plan is not the history of 'valiant individuals' but rather a history of ideas - why some took hold at one time in one place but not in others, how ideas cross fertilised each other, how ideas morphed from one into another. Valiant individuals may be the carriers of ideas, but that is not my focus.

Who the History is for

I am writing for the Asset Manager who has been in the field for a long time - and would like to be able to see his/her own experience in a wider context; and for the new Asset Managers, who will be able to see themselves as part of a continuing tradition. But especially I am writing for the policy makers who have the ability to either make or break. All of my life I have fought against 'mindless compliance'. Lately there has been a call - from asset managers themselves - to have asset management 'mandated'. Generally they see this as a way of getting the attention, and the funds, they require. This was particularly so at the EPA meeting in Washington a few years back, when - despite the fact that no-one knew what they wanted and couldn't agree on just about anything - they still called for the heavy hand of government to 'require' them to do AM and to lay down the rules in concrete. And a few years ago on a trip across Canada I noticed that State Governments were keen to 'guide' local government (despite admitting their own ignorance!) - and they did not take kindly to my suggestion that it might be best to 'leave them alone, they may do better by enthusiastic co-operation among themselves than can be achieved by rules and regulations from above'.

About Policies

So yes, it will be about policies, those that worked (and why) and those that didn't (and why). It will be about struggles, about defeat, about victory. It will be about recognising that every victory is but a stepping stone.

I want to write history that is fun to read - by old hands, by new ones, by policy makers. This is never going to make it onto the best seller lists, but it doesn't have to.

And About the Future

From analysing the past we may be able to make some guesses about the future. And we may be able to see clearer the kind of future that we want - and take steps to avoid the futures we don't want.

The 'How You Got Started' Stories are a first "Baby Step"

But this is a very big project and I am trying to break it down into bite sized pieces so that neither I nor contributors will get indigestion. Telling one's own story is a start in the reflection that I want to encourage. But it is only a start, the first 'baby step'. Future steps will include the 'guided contributions' that you and others have suggested. I don't know yet what these will be - but I have faith that I will see them when the time comes.

I believe that as I move forward I will also - through this process of calling for individual histories, and later for individual thought contributions - find people who may like to take part in small workshops to flesh out ideas and themes and, in effect - to be 'part of history'. I don't know whether anyone has ever tried an international collaborative effort on the scale that I have in mind, but that is part of the challenge.

I think that this is going to be a fascinating journey for all of us. For which, I see myself much in the light of a tour guide, helping everyone to get the most out of his or her individual journey, while ensuring we all get safely to where we are going.

Thank you for giving me the opportunity to develop these thoughts.

Penny

How you can be part of the global AM History Project

It is easy and fun, just tell me how you got started in asset management.

There is a simple formula for the passage - just tell me WHEN you first got interested, WHAT your role was at that time, WHAT inspired you to take an interest in asset management (e.g. person, event, publication), WHAT you then did about your new found interest. And, if relevant, WHAT in your previous experience might have influenced you to take notice when you did. That's it! Just a WHEN and 4 WHATs. As a story (not a CV!) In about 350-400 words. And you can be part of history!

Your stories will become part of the research material and may (if you wish) be placed on the website as Exemplars.

Sydney Water's Asset Management Journey

by Greg Kane and Warwick Eyles
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An insight into some aspects of the journey of evolution of Asset Management in Sydney Water since the early 1990s. Sydney Water defines Asset Management as the business discipline required to manage the water cycle assets to meet stakeholder service requirements at lowest life-cycle cost with acceptable risk.

Sydney Water has existed in various forms since 1880. Its water cycle assets are valued at over $30B. In 1993 it formally adopted asset management with the formation of an Asset Management Unit. This was prompted/guided by New South Wales (NSW) State Government Treasury, auditors and Ministers and by a few unexpected large watermain failures and public disquiet over sewage overflows.

The NSW Total Asset Management Manual 1992 said a few simple things:

- Have a "Service Delivery Strategy" developed with input from stakeholders and customers
- Reinforce the link between assets and the delivery of services
- Encourage cross links between assets; human resources; information technology; and finance
- Incorporate asset management principles into the business planning activities

The manual provided guidance on adopting tools like life cycle management, financial & economic evaluation using discounted cashflow and on maintenance strategies. This work was further expanded with International Infrastructure Management Manual in 2000 and the United Kingdom's Public Available Specification No55 (PAS55) in 2004.

Initial Focus on Maintenance

Some of the early asset management work was on maintenance management. The initial work was focused on developing processes to establish an asset register and asset valuation through a "Pilot stocktake, asset valuation and asset register development" at a single sewage treatment plant. Most of the definitions in financial asset management were developed at this early stage.

Sydney Water adopted Reliability Centred Maintenance (RCM) as the philosophical basis for maintenance. By the middle of 1998, we had documented and communicated the following

- Documentation of maintenance management philosophy, strategies, policies, and standards.
- Definition of terms used in maintenance management.
- Flow Chart for the maintenance management process.
- Guidelines for Maintenance Management Plans for civil, mechanical and electrical assets.
- Performance Indicators for maintenance management.

- Report formats for maintenance management.
- Quality requirements for maintenance management.
- Treasury requirements for maintenance reporting.
- Guidelines for the documentation of operating requirements.
- Documentation of operating analysis.

Valuation

In 1999 Sydney Water adopted Condition Based Asset Valuation. The process included an inspection and desktop evaluation of assets for a condition grading 1 to 5 for the assets. This is translated for the different classes of asset to a remaining service life. A Modern Engineering Equivalent Replacement Assessment (MEERA) is undertaken to derive a valuation for each asset, which is discounted by its remaining life to provide a condition-based valuation. The NSW Treasury requires fixed assets to be revalued comprehensively at least once every 5 years.

Maintenance Information System

In the middle 1990's a new computerised maintenance system was acquired based on the MAXIMO software, heavily modified to integrate with our Geographical Information System in order to manage 40000 km of pipe. Several other MAXIMO databases were also established which have subsequently evolved to two separate systems, one for managing pipes and another for the facilities.

This system is primarily focused on managing Work Orders and lacks the broader AM requirements. The heavy customisation that was required has prevented the efficient upgrade of MAXIMO since the initial installation. This risk has resulted in a project to integrate the differing versions and update to MAXIMO V7 by June 2010.

Sydney Water becomes a State Owned Corporation

In 1995 Sydney Water became a State Owned Corporation with a new act and new regulators. There was also a published Customer Contract, which for the first time clearly documented the rights and obligations of both Sydney Water and our customers. The regulators set and monitor performance standards across all the water cycle assets. The three main regulator and there responsibilities are

- Independent Pricing and Regulatory Tribunal (IPART)- set prices and customer service standards like water continuity and pressure, response times for watermain breaks and sewer blockages and demand and leakage reduction targets
- Department of Health – drinking water quality standards
- Department of Environment and Climate Change- licensing of Sewerage Treatment Systems for environmental performance.

Documentation of the level of service is extremely important for AM as it provides an objective measure against which the assets can be optimised and performance clearly communicated.

An example of the change to indicators is dry weather overflows from sewers primarily caused by tree root blockages. The indicator is the total number of properties affected by a sewage overflow. This number varies from 15000 to 25000 per year primarily due to weather conditions. Program of works to address this indicator is very difficult, as about 80% of

blockages have not previously occurred in the ten years of good records. The inspection of 22,000 km of pipes to find the possible blockages is very expensive. Analysis of customer reactions to blocked sewers shows that the first blockage is tolerated provided that the response times are short but any subsequent blockage causes a complaint and a third one causes outrage. The indicator is moving to the number of customers having 2 and 3 blockages in a year. Programs of works are in place to manage to these indicators.

Sydney Water applies to IPART for a review of the pricing of the services about four yearly and uses Asset Class plans to justify the level of investment in the assets.

Asset Management Plans

In 2000, Sydney Water adopted Asset Management Plans to document the asset planning process, which includes levels of service, the life cycle management strategies and risks. The planning considers aspects such as asset stock and condition, current and future demand, life cycle strategies, gaps in performance, 5 year and 30 year investment plans for both operating and capital expenditure and monitoring and review. There are individual asset management plans for each asset class These plans were successfully used for both the 2004 and 2008 pricing determination for Sydney Water. In 2008, IPART conducted an audit of these plans and generally found them to be consistent with best practise.

The major focus from 2008 has been on developing decision frameworks for the maintain / renew decision and on quantifying the risks. The scope of the decision frameworks is to develop and deploy a decision logic and assessment criteria to select, evaluate and approve assets for renewal or reliability improvements that are required to meet environmental, customer, safety or business efficiency. The main criteria are that the present value cost of maintenance will exceed the present value cost of renewal or there is unacceptable risk.

WSAA Benchmarking Tool

Sydney Water uses benchmarking to assess and compare its performance with other organisations and is essential in developing continuous improvement plans.

The Water Services Association of Australia Inc (WSAA) has an ongoing benchmarking program in the water sector. This rolling program commenced in 2000 with the intention to to provide a tool for utilities to assess their practices and identify improvement opportunities to consider. Through the programs sharing of practices across utilities grows the industry overall. The program has since encompassed benchmarking of Civil Maintenance, Mechanical-Electrical Maintenance, Customer Services, Shared Services and Asset Management.

The AM project purpose was to raise the level of asset management practice in the water industry through identifying process improvements and leading practices that can be shared across the industry. The process assessment used the Aquamark Asset Management Framework and software tool, developed by WSAA in 2003 specifically to provide a consistent and repeatable web-based asset management process-benchmarking model. The Aquamark Asset Management Framework is based around seven core functions covering the asset lifecycle from its conception (planning) to ultimate replacement, fitted within an organisational context of corporate goals/policy and business support systems. The core functions are further subdivided into process, sub-processes and measures to enable detailed assessment.

Sydney Water has competed two benchmarking exercises on Asset Management in 2004 and 2008. The comparison of the repeat participants in the 2004 and 2008 are shown in Slide 6. This benchmarking shows that even with committed organisations the improvement over 4 years could only be characterised as incremental, highlighting that developing asset management process occurs slowly. Importantly, it also showed that scoring assessments changed as staff became more aware of leading practices and future directions (that is, it effectively down-rated the previous assessment). After both exercises, Sydney Water developed and implemented plans to improve its asset management processes.

Asset Management Business Model

After 20 years of structural reforms, in October 2004 Sydney Water adopted a Business Owner/ Asset Owner/ Delivery Partners as its operating model as shown in Figure 1. This was a major step in recognising the role that asset management plays in the success of the business.

Asset Management Models have been adopted by utility businesses (water, electricity and gas) all over the globe. This operating model fundamentally recognises the separation of "decision making" from "doing". For SWC, Asset Management Division assumes the Asset Owner role, while Asset Solutions, Customer Services and Operation and Maintenance are the principal delivery partners of products to customers.

Within Asset Management, the Strategic Asset Management unit was created to ensure that water cycle assets met stakeholder service requirements at lowest life cycle cost with acceptable risk. These structural changes imbedded the asset management processes in the business, provided a greater focus on asset management and the knowledge, skills and competencies required by our people to mange the assets. The development of a competencies and formal training programs has begun.

The concept of delivery partners has been extended to include both internal and external organisations. Sydney Water has several alliances for delivering projects including a Network Alliance for watermain renewals and Mechanical and Electrical Maintenance and Renewal Partner (MEMRP) for managing the maintain/renewal of facility assets.