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AMQ INTERNATIONAL
STRATEGIC ASSET MANAGEMENT

History is an asset management skill

PP3-4 MAIN ARTICLE: Your life today is a reflection of everything you have learnt, experienced, thought and done to date. You are a product of history - and so are the asset portfolios that you manage. The better you understand their history, the better able you are to are to plan for their future. That is why history is one of the essential AM skills. Two historians - who also happen to be asset managers - contribute their thoughts.

ALSO IN THIS ISSUE

Enjoy
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View from a Parisian Coffee Shop

European Trends

Last week I was fortunate enough to be in Paris - soft grey skies, glorious autumn colours - and rain. My thoughts turned to what was happening in Europe in asset management. Here are some trends which may well have application elsewhere.

Trend 1: Consolidation

The first is that, across Europe, a lot of industry is closing down and moving overseas. This has created a situation of overcapacity in supporting infrastructure. Oversized plant is inefficient to run. One solution to this problem has been to close down some of the less advanced plant and, for example in wastewater, to consolidate demand, either in special industrial zones or by trucking or piping in waste from other areas, or both. This has lent itself to commercial win-win deals, with upgrading and revamping of the newly consolidated sites taking precedence over the establishment of new sites.

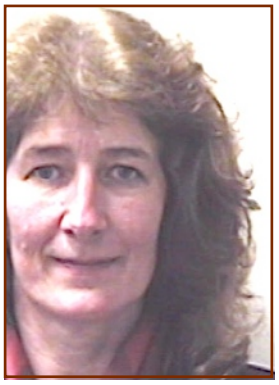
Trend 2: Renewed for 'next use'

Another is the new paradigm for water treatment - no longer cleaning to potable level and looking around for markets, now the idea is to *clean for the next use*. I first noticed this a few years ago with British Waterways who undertook to provide bulk water to industry from the canals *at the condition level required* - and then clean it up before returning it to the canal. An application of life cycle management to water! But the general idea is also applicable to any infrastructure asset. Instead of thinking, planning, and financing renewal to 'as new' conditions, renew 'for the next use', which may be very different from that originally designed.

Trend 3: New rules designed to increase third party access to existing infrastructure

Across the European Union, rail transport and energy markets are being opened up to competition. Simultaneously, many service providers are separating their operational activities from their infrastructure management services, a process that started in Australia many years ago, but seems to be moving further and faster here.

This new situation will require a significant structural transformation and the use of new planning methodologies based on complex technical economic analyses. Plans to charge fees to rail infrastructure users constitute a prime example. **(cont. page 8)**



We have talked before about how Asset Management is much more than engineering alone. AM is a goal, requiring many disciplines, rather than one particular expertise, a task for economists, town planners, architects, psychologists and more. Recently a couple of asset managers, who also happen to be historians, met in a pub and fell into discussion about the relevance of history to AM.

They were **Ruth Wallsgrove,** *ex GM Asset Management of NSW Rail and* **Robin Steel**, *ex Manager of Asset Management at London Underground. Here Ruth tells the story of their discussion.*

Asset Management is History

History gives us context

Both Robin and I had studied history for our first degrees – I have a history MA as well – and we have laughed before about how two historians ended up running significant Asset Management teams leading forward planning in major railways. But suddenly we saw just what the understanding of history brings to it all.

Historians obviously think about – well, history – about what happened in the past, and why. History is all about a sense of time, not just of things being different in the past, but also how we got to where we are now. You never start with a clean slate.

We have the asset base we have now because someone made a decision, or a default based on not making a decision, at some point. They were usually doing the best they could with what they had and knew then. This includes the assumptions, the philosophy surrounding them – how everyone thought (or didn't think) about assets at that time. Unfortunately, assets, like cultures, are often long-lasting, and what was done back then largely determines what we have now.

Taking the long view

Understanding how we got here is vital for planning for what happens in future. Not only are we where we are – but we also can learn from all the mistakes in the past. Historians, unlike say, some politicians or tabloid journalists, don't react to the last thing that happened. We ask not just what people did last week, but last century or last millennium. We don't have to see-saw from one philosophy, or technology, or organisational culture to another. We can see what was good and bad in different approaches and place these in their context and circumstances; we are likely to be sceptical about any supposed silver bullet.

History is NOT 'just the facts'

But there's another quality of a good history training that we realised we exploit. Engineers, scientists and economists can naively think historians are just collectors of facts (I know, because engineers have told me that's all the study of history involves).

They know their own discipline is a bit more complicated than that, and that 'truth' is quite difficult to come by. But in my experience – and I have a science degree as well to compare with – historians are more aware than anyone that they'll never know 'the truth', what 'really' happened. It's all about coming to a working conclusion without being able to know everything. Historians are trained to look for a most likely argument or conclusions based upon analysing and balancing the (often conflicting) evidence available – a pretty good summary of asset management!

Making sense of history

I remember an essay set in the first year of my degree, on a fascinating medieval episode known as the Sicilian Vespers, where we just don't have enough evidence. The professor teaching us said the point of the essay was not, in the end, to go through the evidence such as it is – it is to decide, on the weight of it, what interpretation we come down on. Newly uncovered facts can change this interpretation. But history is not about endless pontification, it is about coming to a decision, however provisional that may be. There is nothing to be learnt, no satisfaction, in hedging your bets.

Asset management, it seems to us, is also being able to weigh up the different factors, some if not all of them imperfectly known (like what is going to happen tomorrow, for example). We have to assess on the basis of training and past experience and sheer gut feeling what 'facts' – data – matter most. We have to put together what we know in a way we can justify (like a good undergraduate history essay) - and decide what to do next.

Trained historians are very wary of ideology.

In interpreting the facts, single techniques or sources are almost bound to lead you astray. And a partial fact conflicting with a solid body of data can still be the most important, if it's the most telling piece of information. 10 decimal places for one measurement may be much less important than something more relevant to the nearest power of 10 – and if that's obvious when I say it, it can be painful for an engineer to face. Quite a lot of AM in the past has been just like that 'looking for your keys under a lamppost' joke, not because they're there but because that's the only place you can see well…

History, of course, is about people – applied psychology at its finest, I think, until the (not near) day when we can make accurate predictions about future behaviour. Asset management is also largely about people – what we really want from an asset, how we approach asset jobs, how we communicate relevant information to each other in practice, how we change a culture from doing "what's always been done" (unlikely to be strictly true, in any case) or reliance on individual and idiosyncratic decision making to a more rational process.

Of course AM is more than just history.

Or at least the sources of our information look a bit different. We do have to decide what to do, not just what happened yesterday. But a keen sense of time, and change, of imperfect information, and all the subtleties in practice of real people, and drawing on analysis of past data to learn lessons or predict themes for the future … we recommend your nearest History Department!

Knowing the history of your assets can help explain what is happening now.

In 1985, utilities and the public service generally knew little about the condition of assets as a whole. Generally speaking we knew only what we could see and experience. One housing authority at that time planned to repair, over a 20 year period, the housing problems it had already observed. When asked what about the problems that would reveal themselves during these next 20 years they were taken aback. It was not a question they had considered.

Predicting roof costs

The first sign that there were serious problems afoot in 1985 was the rapid increase in maintenance budgets for roof repairs. This was significant in all regions but more serious in one region than in others. The first assumption was that the region supervisor was making inappropriate decisions, since this was a region with a large proportion of houses built post rather than pre WW2. Why were not the older regions being similarly, or even worse, affected? There were several reasons but it took a knowledge of asset history to find them. Post war population growth was so rapid that demand exhausted the ability of the building industry to supply. Supplies of seasoned wood ran out and green timbers had to be used to keep up the production levels. Lower grade ceiling insulation was also employed. But what was equally important was that up to the war years, all roofs were of terra cotta, after the war they were constructed of corrugated iron. Knowing the age of the house was thus a clue to predicting both the timing and nature of roof repairs. In modelling renewal for the housing authority, several variations were introduced to cater for changes in known design and construction techniques which made the projections more reliable.

Predicting pipe renewal

Similarly allowing for shorter than average economic lives for those pipes that were laid down in the war years (when all the first quality materials and labour skills were otherwise occupied in the war effort) enabled more meaningful and relevant projections for water and wastewater. Another variation - to take into account the change in construction and inspection rigour with the move to developer contributed assets - also proved valuable. With buried assets that are not easily accessed for condition assessment, an understanding of history is critical. And any long term modelling without a good sense of history can be very misleading and dangerous.

Where age is not known

Many councils do not have records of the age of their roads. However, with a historical knowledge of when areas were developed, reasonable working estimates can be made.

Explaining anomalies

When examining the history of hospital renewal expenditures in one region, one hospital stood out - it had had no renewal expenditure in over 20 years! No one in the head office knew this and were amazed when the results were checked and verified. Looking back at the times when major renewal programs had been initiated we were able to determine that this particular hospital had 'fallen between the cracks' - being not quite in need when other A3 hospitals were being refurbished, and then missing out when funds were diverted to A2 and A1 renewal programs.

Supplementing memory - more than an AIS

Today we can no longer rely on the memory of our workers for a knowledge of history. Most organisations have developed, or are developing, good asset information data bases to provide the information that workers used to carry in their heads. These data bases enable more accurate forecasting and prediction. But modelling the future without a sense of the past can be very dangerous.

When I was modelling default asset renewal projections for South Australia, we would check the reliability of the models by 'running them backwards' - did the model account for the renewal activity that had already happened? If not, what were we missing?

Industry History

Not every organisation has a good historical record of its actions. But the chances are that your history will be not unlike that of others in your industry. So it is worth searching for a history of your industry.

This is also a quick way of getting up to speed when you move into a new industry. I have little knowledge of the retail gas industry as my own experience is confined to bulk transfer from my time on the SA Pipelines Commission. But I found the following history of the gas industry in the UK by Clive Deadman fascinating.

Such a historical knowledge would be an invaluable introduction to anyone in asset management moving into the UK gas industry. And similarly for any industry history. You may want to consider developing such a historical knowledge for yourself.

"Gas" - An excerpt from Chapter 2 'The history of utilities' in

Clive Deadman's "Strategic Asset Management: the quest for utility excellence"
Matador, Leicester, 2010

How helpful would it be for you to be able to express the history of your industry as succinctly as this?

"The first commercial gas works was constructed in 1812 in Great Peter Street, London. It generated gas that was fed through wooden pipes to Westminster Bridge. ...

The provision of gas lighting had a transforming effect. Factories could operate night shifts for the first time, towns and cities became illuminated and social and public events of all sorts became possible in the evenings. ...

However, the cost and environmental effects of generating town gas from coal and the toxic nature of the product resulted in a decline in its domestic appeal. Accordingly the availability of cheaper and cleaner natural gas in the 1960s-1980s was an important development for the modern gas industry. The move from town gas to natural gas had three significant implications for the old gas networks.

Firstly, town gas was a damp gas, and the residual moisture kept the yarn and lead joints of older pipes damp and gas tight. With the introduction of natural gas, a dry gas, the joints have progressively dried out and become more prone to leaks.

A second effect is that, because natural gas has a higher calorific value per cubic metre of network capacity, the move to natural gas meant the capacity of the network was increased. As a consequence, the replacement of old gas mains can frequently be undertaken with a smaller pipe, which has allowed the development of a number of novel 'no dig' techniques to be pioneered in the gas industry. In addition, the surplus capacity of much of the gas network has meant reinforcement of gas networks has not presented the same modernisation challenges as with other utility networks.

Finally, and most significantly, the introduction of natural gas forced the gas industry to consolidate. This meant the closure of towns' coal gas plants and a centralised gas transmission structure imposed on a fragmented industry.

When the gas industry was later forced to embark on complex billing projects and asset registers - through a combination of the practicalities of customer service and a need to manage health and safety issues - the gas industry pioneered many asset management techniques. Many of these skills and information systems concepts have since been carried into other utility sectors through the recruitment of gas industry staff and the use of contractors."

European Trends (continued from Page 2)

In the transport and energy sectors alike, infrastructure managers must provide users with a clear and fair fee structure that covers their real operating costs and future investment needs.

In calculating fee levels infrastructure managers must determine their real operating costs and evaluate the longer-term financial needs generated by their infrastructure management strategy (renovation, maintenance, operations). This information can then be used to calculate the costs incurred by normal operations. The infrastructure access fee must cover at least part of this amount, depending on the pricing policy chosen.

After calculating this annual fee requirement, mechanisms must be defined and used to distribute the costs among infrastructure users in accordance with individual usage of the constituent resources (capacity, availability, energy, etc.).

Naturally, infrastructure managers must also ensure full economic transparency and compliance with regulatory authority requirements.

Overall, the process requires in-depth knowledge of real operating costs and the ability to evaluate long-term policy costs and create appropriate fee calculation mechanisms.

This is creating a market for those who can offer expertise in managing industrial assets (maintenance strategies, economic evaluations, financing) and meeting the engineering requirements of ageing infrastructures (life cycles, ageing mechanisms).

AMENDMENT

Submissions to our “Win a FREE subscription to Strategic Asset Management Challenge” (in SAM 302) must be submitted by **November 25th** (not Nov 31st as previously stated) in order for the winner to be announced in the next issue. We will also announce a new challenge for December.