ASSET MANAGEMENT AS A QUEST 1984-1993

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Chapter Five: Asset Management widens its scope:

Question 3: How much will it likely cost, and when, to renew all state infrastructure?

Developing and arguing the concepts of the True Cost study and applying them within the water authority to create, in effect, an asset management 'proof of concept' had been great fun. Engineers and economists tend to think alike, as a leading New Zealand accountant once explained to me à propos my frustration with accountants: "If you have a problem, you go back to first principles, don't you?" "Of course!" "Yes, and so do engineers, but accountants ask 'What's the rule?'." I had laughed when I heard this but I recognised the truth of it - and the necessity for it. Now, at the Public Accounts Committee (PAC), the question was: how do politicians think?

The answer is that they are more sensitive to nuances. In fact, more sensitive over all. When I said, during one board meeting, that I was not a member of the public service union they all turned on me, and Heini Becker, Right Wing Politician, said "I'm not one of *them*, but even I am a member of my union!" That was an awkward moment and I claimed, and they were prepared to accept for the sake of saving face, that my membership of the Economics Society was an equivalent.

Economists also tend to deal with problems more abstractly than politicians. Indeed, emotional or 'coloured' language in economic argument is frowned on. To an economist if there are two prices you can refer to the lower as a 'discount', or the higher as a 'premium' and the analysis is the same, just two different prices. Not to a politician, as I discovered when talking about electricity prices. A recent rise in the price had created much public dissention so it was fine to talk about discounts, but definitely not safe to talk about premiums.

Overall, it was now necessary to present arguments, not for efficiency and effectiveness, as I had done in the water authority, but rather for parliamentary accountability and avoidance of waste. It was also necessary to create a sense of responsibility for the Committee - and the fact that they were leading in a new field didn't hurt!

The Public Accounts Committee Inquiry

Over 1986 and 1987 we were to produce seven individual agency studies and a final, summary report, showing the impact on the state as a whole. The agencies were initially rather offended at our approach of treating them all on a common basis for this challenged their deeply ingrained belief that each was 'different' and 'unique'.

However it turned out to be a strength of the study. Not only did it enable aggregation, but results couldn't be disregarded as 'exceptions' relating to only one agency. It led to the development of the general principles that were to become the basis of Asset Management and agencies were later able to reassure themselves that they were not the only ones facing asset management challenges.

Our first agency study was public housing. This revealed that the Housing Trust was seriously long-term unsustainable and, despite protests, over the next ten years the Housing Trust found itself needing to significantly downsize. The issues, problems and attitudes we discovered in this first study were to show up in all subsequent studies: for electricity, water, highways, hospitals, public transport and education. Together, our inquiries accounted for over 80% of all state infrastructure.

Our objective was to be able to forecast the extent of infrastructure renewal that would fall due in future years if we made no changes to our practices. A simple enough question. But we found that Asset Management extended far beyond mere asset maintenance and renewal. As the following case study of public housing is to show, we needed to consider not only portfolio sustainability, but also financial management, demand management, market analysis, agency culture and more.

A case study - public housing

The Housing Trust could not understand why we were looking at their long-term renewal.

"We have already carried out a complete audit of our housing portfolio, we know what the problems are and we have a plan for addressing them over the next 20 years."

My follow up question "What of the problems that will only become evident over those next 20 years?" was met with complete puzzlement.

The Committee had arranged for me to brief each agency CEO to let them know that this was not a typical investigation of bad practice but rather a research activity to provide planning information for Parliament. For most, the briefing went smoothly, but not so with the Housing CEO. He hardly let me get a word out before telling me, in tones of considerable annoyance and stress:

"I don't have time to talk to you! I have a much more pressing problem. I need to convince the Federal Government it is on the wrong track requiring current value depreciation."

As a statutory authority, the Housing Trust maintained accrual accounts and its assets were recorded on its balance sheet. But they were in historic cost terms which, after many years of high inflation, greatly understated current value. The Federal Government, now wanted depreciation recorded on a current value basis, which meant that these cost figures would be greatly increased.

The CEO was a worried man. In common with other agencies, he tended to act as if costs that were not recorded were not, in fact, incurred. Also, if depreciation costs were increased he would need to increase rents. He resisted.

The Federal Government co-funded the Trust, so was entitled to ask, but it had never done so before, so why now?

Economic Reform

The answer lay in the economic reform mentioned in Chapter 1.

When the Hawke-Keating Labor Administration ascended to government in 1983, it had already learnt a major lesson from Gough Whitlam's shortened term in office a few years back where, despite major social and environmental advances, Labor, the Left, had lost its majority because of economic blunders. Labor Leader, Bill Hayden, had warned that they needed to develop better economic management skills if they wanted to regain power, skills superior to that of their opposition. So economics took centre stage and, by 1985, two years into the administration, the scene was set for change.

And change we got. In spades! For the past 80 years traditional Labor values had included the beliefs that the marketplace should be constrained by public controls on capital and interest rates, and that there should be strong trade unions with a welfare system that ensured decent wages and support for the disadvantaged. In the next decade everything changed. Paul Kelly, in 'The end of certainty: the story of the 1980s' calls it the 'decade of creative destruction'. This was the economic backdrop to asset management development

This was particularly hard on the Housing Trust for while it had a business framework, it did not see itself as a business. It saw itself as a social institution caring for the homeless and disadvantaged. It focused on service and paid less attention to costs, having the view that what it did was so important that the funding, whatever it was, just needed to be provided.

It was very noticeable with housing, but this attitude of 'importance' justifying costs was common to all agencies at this time. With the economic reforms, pressure was on to move to a more commercial approach.

Using or managing assets?

The Housing Trust didn't manage 'assets', it managed the 'allocation of accommodation'. For this, it only needed to know where the house or unit was, how many bedrooms it had and how easy it was to access. It did not record age, economic life or replacement value - and didn't know why these were of interest to us.

This was, in fact, true of all seven agencies. They acquired assets, operated and maintained them, that is, they used them, but they didn't 'manage' them. They kept only the information needed to provide current service, just as the Housing Trust did, and did not seek information to provide for future requirements, or to ensure that assets were provided efficiently and effectively. Increased demand was automatically met by increased supply. Alternatives were not sought.

Our asset-related questions seemed not only strange but impossible to answer: how could anyone assign an age to a house with 60 year old foundations, a ten year old roof, that was rewired 15 years ago and had just had its wet areas replaced and enhanced? How could anyone determine its current replacement value or its rate of asset consumption? But that is what we needed to do.

When the housing report was published showing that the Trust was unable to sustain its portfolio, the corporate planning staff were shocked. Naturally, for the results were indeed both serious and shocking. But they were also mystified. They didn't know how it could have happened, and they even doubted that it had happened. In any case, how did we know? I pointed out that the asset values, rates of consumption, and likely future renewal, which were the basis of our conclusions, were all derived from their own Trust data.

"All the data came from you!" I said. They agreed.

"Yes, but we didn't know you were going to do *that* with it!"

Modelling housing renewal

So what was it that we did? We looked at their assets 'as assets' and built a model that was able to forecast the default future of housing renewal. Firstly we calculated a unit cost replacement value for a typical housing trust house, then we identified the key renewable components, their cost, their life and their proportion of the total value.

This was a time consuming process with much number crunching and I spent many weeks on my hands and knees, hovering over multiple years of the Trust's budget papers, contract payment documents, and other official papers spread all over the conference room floor. This was supplemented with quantity surveyors' estimates and the research findings of the CSIRO's Division of Housing and Building Construction plus many hours of conversation with the maintenance personnel.

The upshot was that we were able to identify 23 components and sub-components in the basic model. Lastly, we calculated the age distribution of the portfolio. The 44th Report of the PAC on Housing Asset Replacement provides all the data we used, the basic model, its model variations, the assumptions we made and why we made them, along with the references we used to support them. We took the same approach for each agency.

Definitions

As our work was new we were not surprised to find a lack of definitions, not only for asset management but for infrastructure assets themselves. We needed to create our own. The Committee took the view that a good definition is one that gets the job done, or that 'purpose determines definition'. Given our objective, we defined an infrastructure asset in terms of the treatment it needed in order to remain long term viable. Infrastructure was thus defined as 'an asset with an undefined life kept operational as long as required by piecemeal renewal of components'. This enabled us to omit such short lived assets as motor vehicles (typically renewed every two years according to federal tax remits) or computers, and to deal only with complex, multi-component, long-lived assets. We also re-defined 'economic life' to suit such multi-component assets and this became 'the period of time it takes for cost of component renewal to equal the initial asset cost'. (This was defined, for consistency with our analysis, in current value terms).

These definitions remained in common use around the world for almost 20 years and are still more practical than some more modern 'general purpose' definitions intended to serve multiple uses. They also recognise that if we change our purpose, as we may now wish to do as we seek to drive infrastructure decisions that are 'fit for the future' and take environmental considerations into account, then we have to reconsider our definitions as well.

The sustainable size of an asset portfolio

We used an estimate of 100 years for those elements of a house that are likely not to be renewed until such time as the entire house is sold and replaced, such as foundations, walls and the roofing structure. Together with the individual component lives we had calculated for the shorter living components such as floor coverings, electrical appliances and the electric/gas service, we were able to determine the annual rate of asset

consumption for public housing at 1.87%. In other words, roughly every 53.5 years component renewal would amount to the total initial cost of the house (in current value terms). The 'annual rate of asset consumption' was a new concept for housing. It was not depreciation, which is a financial cost allocation, but rather an estimate of physical degradation and obsolescence.

Asset managers are now very familiar with these concepts and what they enable us to do - namely to determine the sustainable level of an asset portfolio given the amount allocated for renewal. But this was the first time information had been used in this way, hence the reaction of the Corporate Planning Branch "We didn't know you were going to do *that* with it!"

If it costs 1.87% of the value of the housing stock each year just to sustain it, it is clear the largest portfolio that is long-term sustainable is (100/1.87) or 53.5 times the renewal budget and, given the Trust's renewal budget at the time and the most optimistic increase it could expect, our figures made it clear that the public housing stock had already greatly exceeded its sustainability level!

Invisibility

Before our modelling, this had been invisible to the Trust. The level of maintenance and component replacement is generally low in the early years of a portfolio. For housing it starts to become significant when houses reach around 30 - 40 years of age.

In 1985 only a small proportion of the housing stock was in this high renewal cost age bracket. But a major cohort, representing the Trust's post war expansion, was about to move into this bracket within the next 5-10 years. It was the ability of our modelling to project these future requirements that was to be so important for all agencies. And so scary!

Since these projections had never been done before and had very serious consequences it was important to take all possible steps to confirm and communicate the accuracy of the modelling. Fortunately, the Trust itself helped make this possible.

It had been the practice of the Trust (and indeed most agencies) to include much component replacement, even upgrading to present standards, in the category 'maintenance expenditure' with insufficient detail to separate renewal from general, or routine, maintenance. However, by 1984/85 rapidly increasing levels of maintenance requests (the leading edge of future replacement increases) had led to quite detailed maintenance budgeting being prepared and, when examined, this enabled a replacement estimate to be determined for that financial year of $14.7m, which was reassuringly close to the $14.6m that the model projected for that period.

'Unfair and Immoral'

Although the PAC reserved its interpretations for its final report, wanting first to see the big picture, and so had not referred to the future sustainability problems in the Housing Report, including just the facts, the significance of these facts was not lost on the Head of the Trust. I was accused of artifically setting the life of a house far too short.

"Why, in England, there are thatched roof cottages that are still fit after 350 years!" he declared, as if this somehow clinched his argument.

My mind immediately flashed to the exhorbitant re-thatching costs those heritage properties required, not to mention that some modern humans would have to stoop to enter, a condition I could not imagine housing trust clients willingly accepting. I did not say this. Instead, I suggested that he pass my figures by his regional managers to see what they thought. We then took an average and their component life figures were within a few months of mine every time. I was not surprised for I had developed my estimates in consultation with them in the first place.

This still did not satisfy the Head of the Trust. In his eyes it was both 'unfair' and 'immoral' to cost asset consumption (or depreciation as he referred to it) on houses that were being provided for the under-privileged. "After all, rich private owners don't have to pay depreciation!" he said, which of course is true - instead, they directly fund the wear and tear on their properties that is represented by such depreciation.

Affordable housing

What made it especially difficult for the Trust was that the government continually spoke of public housing as 'affordable' housing, meaning affordable by those on low income. However, without subsidy, it simply wasn't. The Head knew this. He knew that their houses were not built to a different, more 'affordable' design. Indeed, they sought to make them indistinguishable from other dwellings. Council regulation worked to the same end. So the only way that he could lower the rates to make them more 'affordable' - in the absence of publicly admitting to a subsidy, which was considered not politically acceptable - was to deliberately understate the real costs.

I could appreciate the anguish of the Trust Head, even while he ranted at me. Our projections made it clear that not only would the Trust be financially unable to increase its stock, it couldn't even maintain the portfolio it aready had. From the Head's perspective, this completely ignored community need. He pointed to his rising waiting lists to show that needs were not diminishing, but in fact rising.

Winning the lottery

But did the rising waiting lists really measure need? By June 1985 the Trust held a full 10% of the State's entire housing stock and over one third of its rental market. These figures were greatly in excess of other states and one might therefore expect SA waiting lists to be far lower than theirs. But they weren't. Quite the reverse. SA waiting lists were not only high but, despite large annual acquisitions by the Trust, they were still rising.

In his write up after we published the housing report, Des Colquhoun, a columnist for ' The Advertiser,' Adelaide's morning newspaper, recalled that in the 1950s when housing generally was in extreme short supply and was completely unable to cope with the great influx of returned soldiers, immigrants and refugees, that being granted a housing trust house was like 'winning the lottery'! What he didn't realise, and neither did the Trust, was that it still was!

Conscious of the acres of bleak housing estates in the northern region that had been built in a great hurry during the 1950s, many using green timbers and inferior ceiling insulation because the state was running out of materials, the Trust was keen to do better. It wanted social housing to be indistinguishable from privately owned dwellings nearby. Socially this was no doubt a good idea, but the consequence for the waiting list was that now 'winning' the prize was not only more likely, given the high rate of expansion of the stock, but the

prize itself was so much more attractive, with the result that more people applied and the waiting lists exploded.

A few years later, in Queensland, I was travelling with an officer from their housing authority and he was proudly telling me that their new Minister had been increasing their housing budget after many years of neglect. "And are your waiting lists now rising?" I asked him. Astonished, he said "Why yes, how did you know?"

Understanding the market

At this stage in our research we were becoming keenly aware that asset management involved far more than timely and appropriate maintenance and renewal. And it was not only the impact of external factors on housing, but housing's own impact on the market that was relevant.

To reduce its waiting lists, the Trust decided to increase its annual acquisitions from 2,000 to 6,000 units. Unfortunately, housing construction was at full stretch, all builders were gainfully employed, so for the Trust to build more it had to entice builders away from other jobs. This, of course, resulted in rising prices and longer completion times - for the Trust and for everyone else.

The Trust complained bitterly about this, but did not see that it was responsible for the very events it was complaining about. I tried to explain this to the PAC Chairman when we met for our normal briefing before the weekly committee meeting. He was not interested: new housing was funded by the Commonwealth.

"That's Commonwealth Money. Forget it!" he said dismissively. And I snapped! "Commonwealth, be damned, that's our tax money and they are wasting it!"

Hardly the way to talk to the Chairman, but on this occasion he had been delayed by a succession of meetings and it was 8 pm before we met and we were both tired and hungry and tempers were reasonably short which I like to think was the reason for his unusually brusque response and for my rudeness.

Funding future renewal

However, after we had both calmed down, we sat and talked about it and then about the related general problem of tied grants, that is money granted to the states but tied to decisions made by the Commonwealth Government. The Commonwealth, which had the major taxing powers, wished only to fund additional assets, not renewal. We could see that this would greatly hamper our ability to cope as our assets aged.

Christopher Jay, senior reporter for the Australian Financial Review, had made a presentation to the PAC Biennial Conference the previous year, showing that the proportion of grant money from the Commonwealth was increasingly in the form of these tied grants, thus favouring the Commonwealth's own new projects. In the last few years he had shown there had been a 9% switch in funding from untied to tied grants. This was reducing the funding available for renewal, and also worsening the problem by increasing new additions.

At the committee meeting the following day, the Chairman laid out the case against the Housing Trust's purchasing actions with great clarity and later, when it was time to write the final report, he wrote the section on untying state grants to enable the flexibility to manage renewal.

Incidentally, federal funding of new, with renewal the responsibility of state or local governments, is a problem still affecting many countries.

Coming to grips with the new costing models.

It was not only the Housing Trust that had difficulty with the notion of full costs. Most agencies - and their customers - believed that depreciation should not be charged to current users since it was providing for future assets and future services. There were a couple of confusions with that argument. Firstly depreciation, or asset consumption, simply records a cost and doesn't provide a fund for anything. Secondly, where agencies do choose to include these costs in their charges, it is a charge for the use that *current* consumers are making of the asset, even if that use does not have to be made good till later.

Examples:

When the water authority included the cost of asset consumption (the using up of assets) in the service charge for mains and sewers that had been passed over to them for management by developers, those who had recently bought their houses protested that they had already paid for the mains and sewers in their house price and this was now requiring them to pay twice. This gave rise to what was called the 'double dipping' argument which lasted for years. They didn't see that it was like buying a car and then paying a regular charge to have it continuously serviced. Full cost pricing is still not well understood.

While only the Housing Trust was in a dire situation with respect to long term sustainability, all agencies found that they needed to make adjustments once their full costs were known. The Highways Department saw the future funding it would need if it continued to replace lesser used country roads on the same time scale as more trafficked city roads and quickly set about reconsidering the need.

In the past, the rate of technological development had meant it was always preferable for the Electricity Trust to move to the latest generation technology. Larger generators were much cheaper to operate. This situation was now changing. The rate of improvement in technology was slowing down, cost savings were diminishing and the risks of having so much capacity tied up in one generator were greatly increasing. This meant that renewal, not previously a consideration, now became a viable option.

The State Transport authority had assumed that the economic life of a bus was 12 years, but pressed by the Committee to carry out a proper analysis, found the life to be 16 years. This meant that by replacing at 12 years it had been wasting a good quarter of their expensive imported bus assets. This was happening at a time when the terms of trade were turning against us, increasing state costs. But this was not all, in order to avoid buses being kept beyond their supposed 12 year economic life, the authority had systematically reduced its ability to repair and extend the life of older buses by reducing the size and capability of their depot workshops. This resulted in buses waiting longer for maintenance and spending more time out of commission. The neglect of a simple asset management exercise - determining the appropriate economic life - thus created numerous costly problems.

The Health Commission realised that, rather than just replace like with like, the greatly changed demand for its maternity hospital services, for example, enabled renewal with

smaller, more efficient units. It also saved on insurance when it started to think in terms of component renewal rather than in terms of whole hospitals.

What we learnt

Asset management meant extending the range of considerations that needed to be taken into account for each asset decision. It was no longer a case of simply matching supply to expected demand. Everybody learnt something valuable. And so did we.

We realised that all agencies shared a common mindset. They all acted as if costs that weren't recorded weren't actually incurred. This was pre- commercialisation and it was a forerunner of the adjustment problems to be experienced a few years later.

Now it was time to take everything we had learned and to express this in a way that all agencies and government could understand and learn from. That was the task of the final, or summary, report, the 53rd PAC report.

The summary report did something that the individual reports were unable to do - it looked at the aggregate renewal impact and compared the changing needs of different agencies over time. The high-cost-renewal periods for different agencies (and for different elements within agencies) would change over time, so that the common maintenance budgeting approach of 'whatever you had last year, plus or minus a bit' wouldn't work. Attention needed to paid to prioritisation according to need.

The summary report also considered how we could manage the costs, which was the next question we had set ourselves.