AMQ International's STRATEGIC
339 ASSET MANAGEMENT

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Back to Basics:

THE INFRASTRUCTURE GAP

After several issues aimed at 'advanced' strategic asset managers, it is time for an issue addressed to all.

So here we tackle some vexing issues concerning the Infrastructure Gap which are particularly timely given the misinformation now being promoted by some of those who make their profits by encouraging governments to borrow more than they can afford.

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So there you have it - ideas for everyone!
Please consider and enjoy!
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THE INFRASTRUCTURE GAP
- means different things to different people

The term 'infrastructure gap' has grown in popularity in recent years and with this popularity has come a diversity of interpretations. It is important to realise that the way that the Infrastructure Gap is commonly interpreted in local government is NOT the way that it is interpreted at State and Federal levels, by construction companies and their organisations, or by Infrastructure Australia. Nor is it the way that the term 'infrastructure gap' is interpreted by the general public.

1. Infrastructure Gap interpreted as Infrastructure ***Renewal*** Gap

The most common interpretation in local government of the 'Infrastructure Gap', at least in Australia and New Zealand, is as a 'renewal gap' - the difference between the cost of renewing ageing infrastructure over a given period and the resources that are expected to be provided over the same period. I say, 'expected' because the 'renewal gap' is a forward looking concept. The term 'renewal gap' was first popularised in the 1998 local government infrastructure report for Victoria "Facing the Renewal Gap" where the gap was measured as the projected renewal requirements over the next 5, 10 and 15 years, and matched with the current renewal funding and any increases that the organisation had already planned.

The amount required to renew ageing assets is generally, (again, at least in Australia and New Zealand) kept separate from, and is additional to, any resources needed to increase the amount of infrastructure provided.

In the USA, an early study "Fragile Foundations" that was brought out in 1987, did not distinguish between the two requirements and it was, therefore, difficult to know how to interpret the information and what to do to improve the situation. Subsequent 'Infrastructure Score Cards' also have this problem.

Infrastructure Renewal Gap is Measurable

However, it is valuable to separate the two as, given that we know the age of assets, their expected average lives and renewal costs, it is possible to measure the gap with some objectivity. Victoria has measured the change in the Renewal Gap for local government consistently over a period of about 8 years.

2. Infrastructure Gap interpreted as 'Infrastructure ***Deficiency'***

The term "Infrastructure Gap" when used by State and Federal Governments, and when used by Construction Companies or Associations, or Infrastructure Australia will most often refer to the need for new capital projects (i.e. upgrade or expansion) rather than renewal) to fill a perceived 'infrastructure deficiency. Where renewal is involved, in il h g es



Infrastructure Deficiency is almost impossible to measure

Because the infrastructure deficiency is the difference between the infrastructure that we have and 'desired' levels of infrastructure - and there is no limit to our desires - it is very difficult, to put an effective figure on the deficiency. This, however, has not stopped the frequent publications of figures in their billions said to represent this gap.

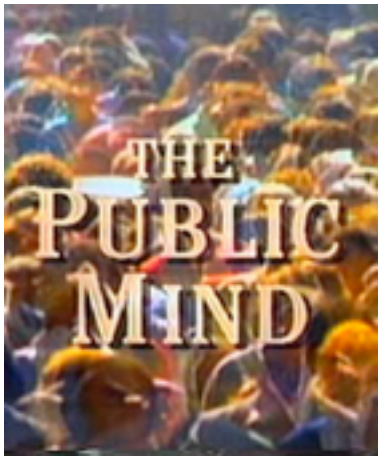
Theoretically, if we had a complete list of infrastructure projects and all had been fully costed and justified with business case proposals, it would be possible to measure the deficiency gap. Such a measure, however, would be temporary in the extreme since tomorrow someone could come up with a new idea to add to the list, and tomorrow, changes will occur that would alter the business case proposals.

Where figures are quoted for infrastructure deficiency gaps they are almost certainly never based on detailed costings - rather they are 'estimates' used to indicate the general size of the problem - with little detail even on the nature of the individual projects that comprise the 'gap'.

What does this mean for Asset Management?

1. Grants for infrastructure renewal will be easier to 'sell' to a higher level funding authority if they can be packaged as part of a major upgrade promising better services or services to an expanded community. However, such grants will inevitably result in increased operations and maintenance costs and this will need to be taken into account when making such grant claims.

2. It follows that: renewal to maintain the ‘status quo’ (the kind of renewal measured by the infrastructure renewal gap calculations) will need to be funded ‘in-house’ if the overall costs are to be minimised.



3. Infrastructure Gap in the Public Mind

Infrastructure has been sold to the general public as a panacea for all ills - an employment, wealth and life style enhancer beyond all others.

It was infrastructure that governments turned to when they wanted to give the economy a short but sharp stimulus at the time of the Global Financial Crisis because they knew that this would be well received by the public.

Since infrastructure (wisely invested in) take considerable time to plan, design, and construct, it was never going to provide a solution to the 'short, sharp, shock' that Governments wanted on that occasion. Also, since spending on infrastructure gives rise to ongoing operating and maintenance costs (often of an order of magnitude far larger than the original investment), it was never going to be easy to switch off the expenditure later when required.

So why did Governments do it?

The answer is that, in the public mind, 'infrastructure' is 'good'. In the public mind, there is no such thing as 'wasted money on an unnecessary infrastructure project, on a badly thought out, inappropriate infrastructure project.

What does this mean for the measurability of the infrastructure gap in the public mind?

In simple terms, while all infrastructure is inherently a 'good thing' and you can never have too much of a good thing, in the public mind we can never have enough infrastructure. in other words, the infrastructure gap will always be positive. The size of the gap in the public mind is also more likely to be related to the general health of the economy and the general happiness of the people that anything else.

What does it mean for Asset Management?

1. Every extra dollar spent on infrastructure THIS year, means extra dollars that will need to be spent on operations and maintenance EVERY year.

2. Also, every extra dollar spent on infrastructure capital is one less dollar that is available to be spent on operations and maintenance.

3. If Asset Management is to succeed in bringing down the infrastructure renewal gap and finding creative (non-infrastructure) ways of meeting the service needs desired from additional infrastructure, - *a change in public mind sets is necessary.*

But is 'whatever it takes' even possible?

Considering the information in the previous three pages - is closing the infrastructure gap even possible?

The answer is YES

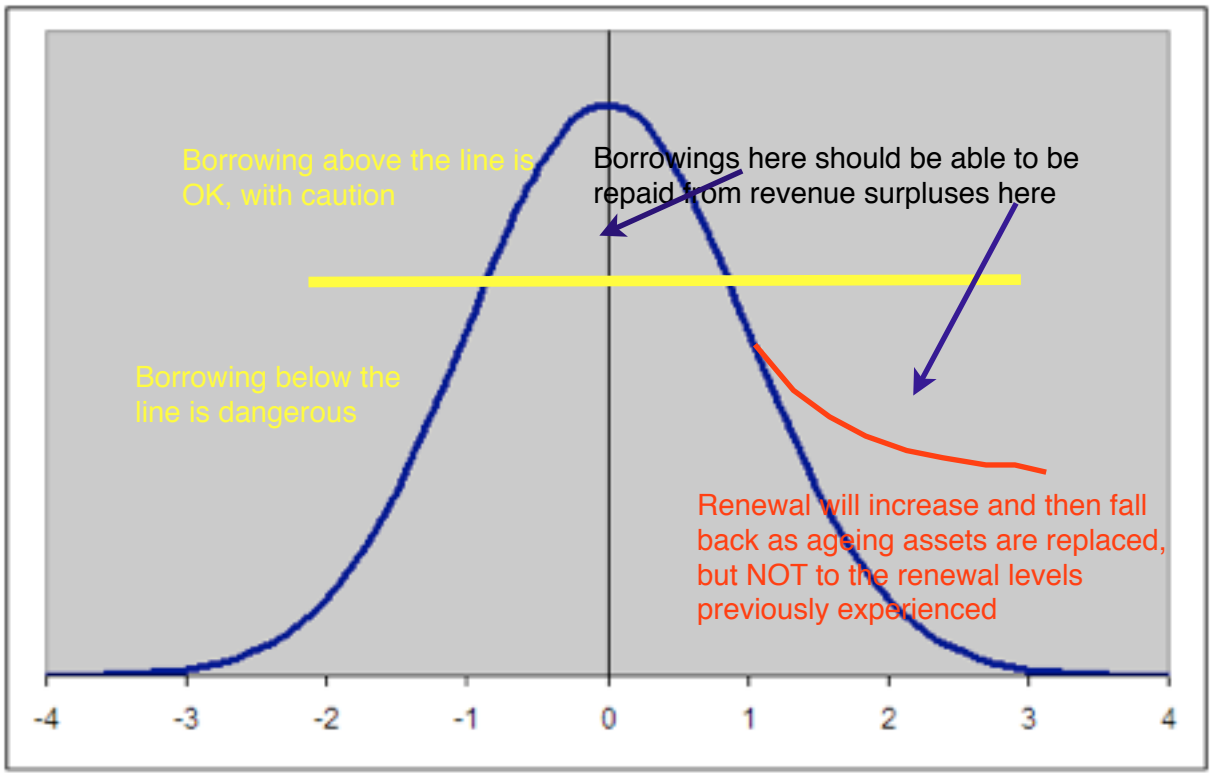
- If we are looking at an 'infrastructure renewal gap', and many councils have succeeded in reducing their gaps and thus becoming more long term sustainable. It is measurable and we can tell whether we are making improvements or not.

The answer is NO

- If we are looking at the 'infrastructure deficiency gap'. This gap will continue to exist, and indeed, grow as long as people can continue to imagine and develop new infrastructure proposals. There is no 'stopping place', no time when we would be able to say "OK, that's it, we have enough".

- So as an action agenda, it makes no sense to try to reduce this gap - a far better use of time and resources would be to insist on rigorous standards of project appraisal and decision making to avoid spending on wasteful projects. (the decision making templates on the Infrastructure Australia website would be a good place to start.)

The answer is NO, or maybe Yes



- If we are looking at the public mind.

- **NO,** as long as the public thinks of the 'infrastructure gap' in terms of infrastructure deficiency that can only be made good with more infrastructure.

- **YES**, if the public can be re-educated. A number of councils have gone out of their way to educate their communities as to the costs, as well as the benefits, of community infrastructure. We certainly cannot reduce the gap by building more infrastructure, but we might be able to reduce the gap in the public mind by creating greater understanding.

- The understanding that is required is that it is **services** that count! Asset Managers know this but the message, for the most part, has not yet been communicated to the public. How can we do this? Well, for one thing, we can start 'talking services' and not 'talking infrastructure'. Create 'photo-ops' for new and improved services (happy faces of users rather than pictures of infrastructure)

- see also, '**a crazy idea that might just work**' on page 10

SHOULD YOU BORROW TO FUND ASSET RENEWAL?

Let us first state that borrowing is a legitimate method of providing for asset renewal.

In the past, burnt by the rapid rise in interest rates during the 1990s, many councils instigated rules to prevent borrowing. Also, during the period of global loan limits, many state governments limited the amount that councils could borrow. There have thus been historical reasons why borrowing has sometimes been rejected as a valid funding source for renewal. However these reasons no longer apply and it is time to re-visit the wisdom of any rules on borrowing that are still on your books.

BUT, and it is a big BUT, there are times to borrow - and times *not* to borrow, and the wise asset manager will know the difference.

You should borrow when

(1) Renewal generates a *cash flow* that can fund the interest payments. If the savings in maintenance and operations that would result from renewal are sufficient to pay the interest on the loan (and to repay the loan itself before the savings cease to yield enough of a cash flow) then borrowing is a sound strategy. (Note: it is not sufficient to claim a net *benefit* flow, the savings must be cash savings because the interest and repayment costs are cash costs.)

(2) You can clearly demonstrate that the agency is at or approaching a peak in its renewal profile with diminished need for renewal funds in future years.

WHEN IT IS SAFE TO BORROW

If borrowing is introduced when agencies first start to feel the effects of deferred maintenance or renewal demands, it is almost certainly far too soon!

Renewal should initially be paid for by increasing rate revenues.

Only towards the end of the renewal 'hump' should resort be made to lending. As can be seen from the diagram, if the initial level of renewal is paid for by raising rates and borrowings are only resorted to to even off the peak, then the loans and interest can be repaid from the now higher rate revenues once the major part of renewal is over. (Mathematically, the area under the curve and above the yellow line should be approximately equal to the area under the yellow line and above the red curve. You won't be able to measure this in all likelihood but this is what you should aim at.)

It is important to realise that once the major hump of renewal is over and renewal starts to decline, it will not decline to the position it started from.

Your renewal from now on will be permanently higher. This is because when you first experience renewal, it is of those assets that were installed many years ago. You have been increasing your asset base ever since. In the future, renewal is going to reflect this higher asset base.

To demonstrate that you are (or are not) approaching a peak (i.e. are above the yellow line) you will need to have a sound asset management plan that records the age and economic lives of your asset base, sufficient for you to map the distribution of renewal cost and timings.

Borrowing when you do not have this information to support you is the asset management equivalent of playing Russian Roulette.

The above is the contribution of the Asset Manager to the borrowing decision.

The finance manager will have additional concerns, such as the source of the borrowings and the likelihood of rate rises (or declines) in the future.

Recently, some companies that earn their incomes by lending money have been advising councils to borrow to fund their renewal. Be cautious!

Their advice is in their interests, but it may not be in yours. They cannot know where you are in your renewal cycle.

WHY YOUR O&M *WILL* - ***AND MUST*** - INCREASE AS A PROPORTION OF YOUR BUDGET

IF YOU ARE TO PROVIDE THE BEST, LEAST COST, SERVICE TO YOUR COMMUNITY

I was speaking recently with a financial consultant who has a fair amount of influence in local government, particularly in New South Wales and I was dismayed at his lack of understanding of the relationship between capital and O&M. The tenor of his argument to me was that councils were spending too much on O&M, and should be spending more on infrastructure. It is possible that he could be simply thinking that more needed to be spent on asset renewal, yet his comment that councils were spending 'too much' on O&M was disturbing. Consider:

CAPITAL (it is only the beginning) With it then comes:

Operations
Maintenance
Administration
Security
IT

Three Reasons Why O&M will increase over time

Reason 1: Capital Expenditure is 'once-off' while Recurrent Expenditure is a function of aggregated past capital spending.

Operating, maintenance and administration (recurrent costs) are a function of the size of the total asset portfolio, not the annual additions to it. Suppose we add one new hospital to the portfolio each year, at a cost of, say $100M, with associated operating,

maintenance and administrative costs of, say, $50M. The capital budget (ignoring inflation for the moment) is then constant at $100M. The recurrent costs, however, increase by $50M every year.

Spending more on infrastructure only increases the size of the portfolio and since recurrent expenditure is a function of portfolio size as you spend more on infrastructure you need to spend more on operating and maintaining it.

Another way of expressing this is the typical life cycle cost curve where the costs of operating and maintenance over the life of the asset dominate the initial acquisition cost.

Reducing recurrent expenditure only means that we are able to get less use from our capital.

Reason 2: Changing standards increase recurrent demands relative to capital

But this is not all! As each country becomes richer and more developed, it seeks to impose higher environmental and OHS standards; and to require greater due diligence, and financial security requiring more effort spent in planning, insurance, and legal requirements. These occur whether or not we increase capital, and they all increase) &M costs as well as other recurrent costs with the result that as we become more developed we require more non-capital to capital expense for every construction dollar.

Reason 3: Development itself changes the nature of demand

For most developed urban centres the period of heavy expenditure on basic infrastructure is now past, major roads, sewers, water mains and electrical conduits have been laid down and now require only maintenance and periodic piecemeal renewal. Major infrastructure expenditure is associated with new developments rather than existing ones and the fact is that we are less involved in new developments than we were in the past. As populations and urban centres develop, the nature of demand changes from the type of services that can only be supplied by new infrastructure to the type of services that are supplied by making greater use of existing infrastructure. That is, our demands are less construction related and more service related.

In summary:

The purpose of infrastructure is to provide service but the only way that this can happen is if we USE it, and using infrastructure means spending on operations, maintenance and administration.

This is not to deny that there is infrastructure in need of renewal. However the arguments for renewal spending need to be made on a case by case basis not by using some mythical ‘good’ ratio of capital: recurrent spending from which we are increasingly departing.

And to finish with, here is a crazy idea that might just work, if you are game enough to try it!

Is it possible to change a public mind-set away from "Infrastructure is Good" to "Services are Good"?

Most asset managers have now made the transition from 'asset centric' management to 'service centric'. But how do we get our communities to make the same journey?

Until they do we are always going to have pressure to acquire more assets, regardless of whether the costs are justified by the benefits they provide, and ratepayers will continue to reward councillors and CEOs according to their 'success' in acquiring more capital grants from higher levels of government - again regardless of the effect on the recurrent budget, or the community benefits.

For a few years now, 'Jim's Mowing' has made a good business out of recognising that the possession of a lawn mower is not the objective, but rather the benefit of a nicely mowed lawn. They have successfully divorced the benefits from the assets.

Recently I was reading about community groups who were sharing their assets, toys and sporting equipment. They did it for the fun of being involved in a community group, in doing something that helped save the planet, and for a few dollars for themselves or a favourite sports group or charity. The point is that they were actively separating services from the ownership of the assets that provided them.

Councils already provide libraries, including toy libraries, which do the same thing. But the more that individuals can be involved in doing it for themselves the greater the 'mind-set-change' benefits.

So here is the crazy idea: what if councils were to seek out and publicise the work of any sharing group in the community in the council newsletter. By doing so, they recognise service separated from ownership of assets. What's more, so do all the readers.

Many councils run workshops to help community members set up their own small business. What if they were also to run workshops (perhaps facilitated by the sharing groups already publicised) to help people create their own sharing groups? Perhaps as part of the council's commitment to longer term sustainability?

As I said, a crazy idea - but it might just work. The way that people react in their own private lives has been shown to be the way that they also react when it comes to public infrastructure decisions. So is it worth a try?