

Asset Management Planning: Is our journey on the right track?

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Abstract

Twenty years ago most of us hadn't heard of Asset Management Plans (AMP); now many of us have been through several rewrites and our plans have become much more comprehensive. Our asset management plan journey has been driven by the need to meet several changes to legislation, signals from the Office of the Auditor General, and our personal and organisational initiative.

Others, only recently embarked on their AM journey.

Many Developing Countries and Least Developed Countries are applying Asset Management techniques as they look to plan for their futures. With different priorities, these nations journeys differ from ours and there may be lessons we can learn as we look at the value our AMPs are delivering to us.

This paper will consider these questions:

- When we strip Asset Management planning back to the basics, how is the progress on our journey?
- What can we learn from others who are at a different stage of their journey?
- Are we focussing on the aspects that make a significant difference?

Introduction

In this paper we will take a look back at the Infrastructural Asset Management (AM) journey New Zealand has been on for many years. We will consider the approach that others (in particular developing countries and less developed countries) are applying, as they employ asset management techniques. Bringing these together will provide some learnings for us as we move forward.

The term Asset Management in association with physical assets was first used in the 1980's, and Dr Penny Burns (Strategic Asset Management) is one of those who cemented Asset Management as part of our wider profession.

With AM in its infancy, we were at a stage where we 'didn't know what we didn't know'!

Accounting meets Engineering

Remember back to SSAP28: Accounting for Fixed Assets (1991) and SSAP3 Accounting for Depreciation (1984)? As the predecessors of FRS3, the scene was set for considering the financial value of infrastructural assets and accounting for depreciation. In NZ this was the spark for the Asset Management profession.

Asset Management was relatively new to most of us, and for many of us, we were yet to decide if this meant a positive change in our business, or even more compliance.

For many of the New Zealanders asset management started taking shape through the NAMs workshop series throughout NZ 1997-1999. The 1997 workshops on 'how to write an Asset Management Plan' used the NZ Infrastructure Asset Management Manual (the green book), that's now eighteen years ago.

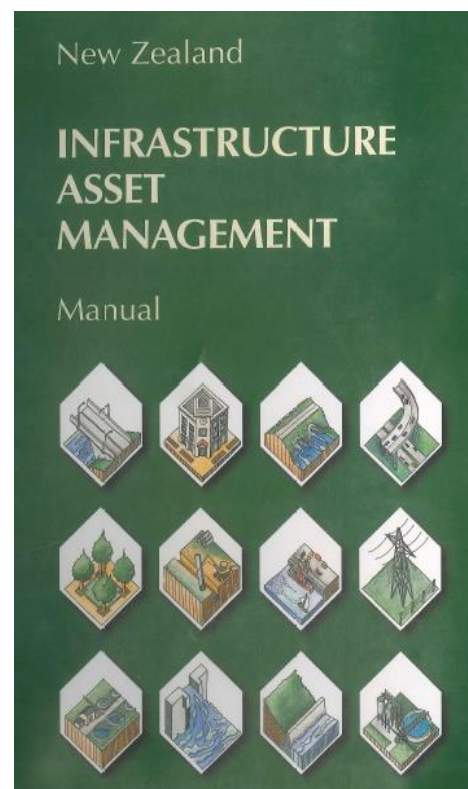
That NZ Infrastructure Asset Management Manual described asset management as:

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner. (NZ Infrastructure Asset Management Manual, 1996)

Joint efforts have moved things along

The development of comprehensive asset management software packages gained traction quickly with joint effort enabling rapid take up of RAMM for roads (from 1989); dTIMS (from 1998) and MITS-Hansen for piped assets through the PAMS initiative (1993).

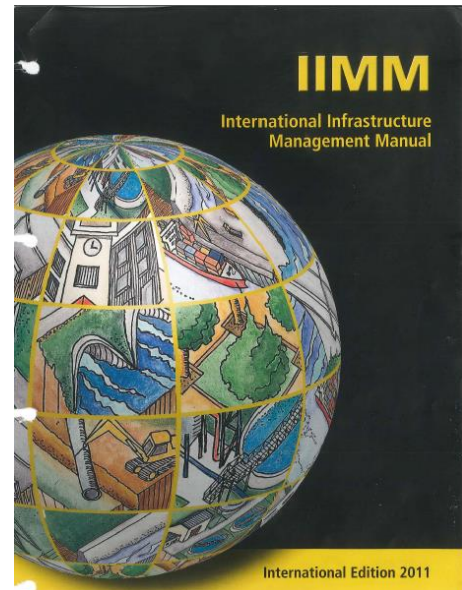
Parks and Recreation Professionals also saw the opportunity for a combined approach to AM Systems with the PRAMS project establishing 'Confirm' across many NZ Councils.



As well as software, NAMS was taking the lead with a range of training opportunities; and the first International Infrastructure Management Manual in 2000 (the IIMM - the black book).

As a nation, NZ has made huge progress and much of that can be attributed to collective effort and committed leadership.

As individuals and individual organisations, the pace has differed. Some embraced asset management holistically and enthusiastically, driving changes in approach and attitude; in some centres, District and City Engineers became Asset Managers overnight as their job titles changed; elsewhere things carried on as they were but with the addition of some hefty documentation to hopefully keep the auditor happy.



Approaches have varied between bottom up approaches where asset inventories and collating institutional knowledge shaped a detailed operations focus; while others have followed a strategic planning (or top-down) approach, driving the organisations objectives through into day to day decision and actions.

Long term planning becomes part of us

Building on the need to provide prudent financial plans, the Local Government Act 2002 brought another twist for local government engineers. Not only had we become 'part-accountant' in the 1990s, now we were morphing into strategic planners.

Lifecycle asset management, became common place, with consideration given to how assets will be utilised from inception to replacement or disposal.

(Figure 2.1.1, NZ Infrastructure Asset Management Manual)



Role of the Office of the Auditor General

At the same time the role of the Office of the Auditor General (OAG) become clear as both guide and auditor. New Zealand local government as a sector has benefitted from an excellent relationship with the OAG, with thinking and approached the better business developed and some collegial assistance provided to those needing support. This is at odds to the stricter 'regulator' approach seen elsewhere.

Where are we at now?

After some twenty years at Asset Management we have a much better idea of what we don't know. We captured reams of institutional knowledge, captured accurate details of what assets we have, what they are worth, and how they work together to support our communities.

We have worked hard to discuss what levels of service are with our communities; and developed gap analyses and programmes in order to improve delivery of the 'right' service standard. As economic and financial constraints have intervened on our plans, the targets have often become less achievable.

Dr Penny Burns has described this phase as "a new AWARENESS".

"Specifically we are becoming increasingly aware that we don't have all the answers - indeed we are not even sure that we are asking the right questions. It is also becoming increasingly clear that funding is not going to be available - at least not enough to suffice without major change. Asset management has become more complex - and much more is being expected of asset managers (by our organisations, by the regulator, by the community and, increasingly, by other professionals and other stake holders who are now taking in interest in 'our' problems.)

(Burns, P. 2012)

New tools

Our professional tool box continues to grow. We can use these tools to help us, or take a compliance approach; adding new ideas and approaches only when we are required to do so.

As a tool to help the Cabinet ascertain how the Government's investment should be prioritised, the Better Business Case model provides a recognised and well developed model for leading discussion. It's not answer, but a tool for better thinking; as a compliance exercise, it is of little value.

With the Government's review of the Local Government Act 2002, there has been further discussion about an integrated long term approach to asset management with the idea of thirty-year infrastructure strategies. Looking at building on the financial strategies established in 2012, it seems very sensible to combine the assessment of land use change, infrastructural response and a sustainable financial strategy to match.

This decade, the New Zealand Transport Agency (NZTA), has included asset management as one the enablers of greater saving in the transport sector as the relative revenue stream continues to shrink.

Greater international collaborating is broadening the thinking and the application of tools. IPWEA, ISO 55000 and expanding training opportunities to mention a few.

What is happening elsewhere?

Developing countries and less developed countries

Developing countries provide a useful comparison to the relative comfort of asset management in New Zealand. Developing countries face changes at a different level, and in a very different economic and funding context.

The United Nations Development Programme's Country Classification System is built around the Human Development Index (HDI). In the HDR 2010, the income measure used is Gross National Income per capita (equivalent US dollars); longevity is measured by life expectancy at birth; and for education, a proxy is constructed by combining measures of actual and expected years of schooling. The UNDP, the World Bank, and the IMF approach classification system based on countries' development attainment very differently; nonetheless, their taxonomies are similar in that they designate about 20–25 percent of countries as developed (adapted from Lynge, N. 2011). That means 75% of the nations on earth are regarded as developing or less developed countries.

Many nations have established infrastructure through loans or gifts from other countries and multilateral aid agencies. These programmes have at times failed to deliver long term benefits as infrastructure that is a poor fit is deployed, and there is inadequate provision for sufficient maintenance and renewal. Decision making and prioritisation can be affected where there an opportunity for 'free money' when aid is available for specific capital projects.

For some a focus on capital has enabled high profile projects to progress, sometimes these have been more of a 'mark of progress' than a response to a developmental need.

"Pacific island countries in the 1960s and 1970s had a proud emphasis on infrastructure, including new water treatment plants, sewage systems, roads, airfields, and ports. However, funding for the ongoing maintenance of infrastructure has suffered as a result of efforts to maintain a sound fiscal footing and due to competing expenditure priorities. Pacific island governments have generally prioritised new infrastructure projects over the ongoing management of existing infrastructure." (PRIF, 2013a)

There is currently a strong initiative from funding agencies such as the World Bank and Asian Development Bank (ADB) to shift the focus away from larger scale capital projects to initiatives that promote and incentivise basic yet effective asset management practices. Achieving this focus shift comes with certain challenges as the "real problems" for these nations in most cases resolves around basic services provision such as hospitals and schools. Then there are also significant changes in the environment where global warming has a direct impact on the communities such as Tuvalu and others where the height level of the islands are not that much higher than the sea levels. This combined with significant tropical storms and other natural disasters often minify the focus around asset preservation knowing that it may be washed away within an instance when the next storm hits.

Some of these factors have not only dissolved the practices around asset management and maintenance, but it also led to a significant and real loss of skills. In many developing countries such as those in Africa or South America, road maintenance has become a vehicle to the establishment of small and medium enterprises. Some of these has grown into small businesses and many has foster the many other aid programmes to alleviate poverty through literacy programmes, medical assistance and addressing gender equality. However in most of the pacific countries basic contracting skills for road maintenance simply does not exist. However, addressing these issues through a holistic approach of education and skill building often is best driven through an asset management approach.

As some developing countries consider asset management, the drivers are clear:

- Integration with strategic goals in terms of economic growth (national plans)
- The importance of public health in terms of waters
- The establishment of accountability and appropriate incentives
- The need for a long term approach, where 'aid projects' are able to be deployed and implemented through building local capacity and competency.



As the awareness of the long-term benefits of infrastructure management grow in developing countries there has been a growing number of donor and development bank funded projects to improve infrastructure management planning. Recently the Government of Tokelau has initiated the Tokelau Asset Management Project, which will deliver an asset register, asset management policy, asset management strategy and asset management plan. This project will provide the basis of the Government of Tokelau's longer term infrastructure asset management planning, and sustainable level of service delivery.

A structured approach to Asset Management is aligned with the outcomes sought:

1. Establish a framework for asset management so there is understanding of what is being done;
2. Ensure the framework (or policy) is aligned with the national strategic (infrastructure) plan and aligns with the economic and social objectives;
3. Establish an inventory of the assets that exist
4. Develop an asset management plan to clarify demand, change and future investment requirements
5. Establish programmes for proactive maintenance and renewal planning; along with and growth of a local skills base to implement these programmes.

Stripping Asset Management back to the basics

Why do we do asset management?

The IIMM 2011 notes the benefits of asset management as being for society as a whole;

- Infrastructure networks provide the platform for economic development
- Infrastructure and property assets meet social and recreation needs of the community

- Good quality infrastructure is the cornerstone of public health and safety
- Good infrastructure supports sustainable societies
- Infrastructure networks are interdependent

The IIMM 2011 goes on to highlight the benefits of improved asset management as:

- Strong governance and accountability
- More sustainable decisions
- Enhanced customer service
- Effective risk management
- Improved financial efficiency

When we compare this with those who don't have twenty years of AM journey we have to question if we are doing asset management for the right reasons, and seeking the right outcomes.

David Fraser, formerly of Hastings District Council at the IDS form in April 2014, spoke about how to be better custodians of our networks. This was a timely reminder of the 'public service ethos' and that a custodian is *"someone who keeps and protects something valuable for another person."*

The seven components of Asset Management

Looking back to the 1990's, MTV was screening it's 'unplugged' rock concerts. When we do the same, and strip asset management back to its essence, there are seven 'instruments' that combine together to tell the story.

1. Description of assets
2. Levels of service
3. Growth and demand
4. Risk management
5. Lifecycle management
6. Financial assumptions and forecasts
7. Sustainability

When we apply a (better) business case approach to these components, our attention becomes more focused on the options we are presented. While we have applied much of our asset management thought to achieving a desired level of service, we have diminished the importance of risk and demand. Risks and changes in demand may well materialise without our involvement; and affect the ability to achieve the level of service targeted. The five case model helps us look at the priority of changes in demand, risk and level of service.

What can we learn?

To focus on what matters

In the 2000's (before the global financial crisis) there was a perception many of us created 'shopping lists' of projects and AM improvements. While there was plenty of scope for improvement, often we were unrealistic about what should, and could be achieved.

The 'bottom-up' approach, while thorough didn't always link in with the organisation's objectives and strategic approach. This wasn't helped when the AM approach was less than holistic, and responsibilities remained split between the traditional engineering, finance and planning sectors.

Are you heading in the right direction? Measuring your progress is essential; you can look back from where you came and celebrate! And you should look forward knowing where you are heading and the path you are taking to get there.

Build from a firm foundation

The foundation of asset management is inventory. *Know what you've got. Know what it is worth.*

Bruce Robertson, the Assistant Auditor-General, Local Government reminded the RIMS/IDS Forum in March 2014 of the importance of data, a message that has remained constant for twenty years.

Use what you've got

Use what you've got. This is the essence of good asset management.

PRIF remind us of this in terms of maintenance in the Pacific. Building assets, neglecting them leads to rebuilding. Studies have shown that inadequate lifecycle management has led to long term costs of up to ten times what could be achieved in an optimal solution.

If capital is needed, know why you are spending. This is the lesson from the Five Case Model and Investment Logic Mapping. While the addition of modern new infrastructure may be seen as a measure of our progress; encumbering this or future generations with the cost of unnecessary infrastructure doesn't make sense.

The infrastructure, existing or new must be 'fit for purpose'. If value is stated as benefits less costs, then benefits must be realised to be of value to the community.

Why do we bother?

New Zealand (and Australia) clearly are not facing the same challenges as less developed countries. But there are opportunities for both to gain from asset management in both cases. Perhaps the why we need good (and better) asset management isn't as obvious to us – the why question?

As pressures on spending continue, we need to know where to spend our money to get the best return on the assets we are responsible for.

If we look to the manufacturing sector, production and reliability is key. Planned shutdowns are kept to a minimum and outages are avoided at all costs. Quality management systems are relied on to ensure value is achieved from the assets employed. Risk management is understood and critical assets are treated appropriately. While we should be doing things 'at all costs'; there is plenty to consider. It's about return on investment and reliably delivering the appropriate level of service.

How do we get there?

As asset managers there are bottom lines for us we can't ignore:

1. I want to keep my job!
2. I want to keep the auditor off my back
3. I want to keep NZTA (transportation's central government funding agency) happy.

In developing our asset management skill as individuals; and our competence and capacity as organisations it is useful to consider these goals.

Our jobs include interaction with managers and those in governance roles. Their role differs a little but is rooted in the purpose of local government:

10 Purpose of local government

(1) The purpose of local government is—

(a) to enable democratic local decision-making and action by, and on behalf of, communities; and

(b) to meet the current and future needs of communities for good-quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost-effective for households and businesses.

... good-quality, in relation to local infrastructure, local public services, and performance of regulatory functions, means infrastructure, services, and performance that are—

(a) efficient; and

(b) effective; and

(c) appropriate to present and anticipated future circumstances.

Doing our jobs to drive efficiency, effectiveness and with consideration of current and future generations shouldn't need to be incentivised. Do any of us want to be remembered as inefficient or ineffective?

Sometimes the incentive is just to comply. This has been of some benefit in New Zealand. At the IFME Conference in Melbourne in 2009, one commentator noted that a degree of regulation seemed to have been good for NZ, perhaps other countries (like Australia) could do with a '*bit more stick*'.

If it makes good sense for less developed countries with less resources to use asset management to sharpen their community spend, it should make good sense to us. Without incentives.

Asset management maturity

Has your organisation matured? Have you built on from 1997 where you can say you are *providing the required level of service in the most cost-effective manner?*

Looking at developing countries, there is a real focus on integrating social, cultural and economic drivers along with the need for affordability in long-term infrastructure provision. Even where the capital cost of infrastructure is funded by others.

As also demonstrated in the better business case model, this should be considered as integral to any project decision.

Conclusion

NZ has the advantage of many years of mandated AM, while other countries (developed and less developed) aren't as far along their AM journey.

There are three key items to remember wherever we are along the journey:

1. Know where our destination is
2. Ensure your asset information is a firm platform
3. Build onto a framework of the core component of AM

Our investment relies on these three. As prudent stewards and custodians of assets and services; we, along with those in less developed countries owe this to our communities.

Keywords: Asset Management, Asset Management Plan, AMP, Infrastructure

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Theunis has undertaken extensive asset management related research within New Zealand and overseas.

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Ross is the founder of Waugh Infrastructure Management and is an Infrastructure Asset Management and systems integration specialist with over 30 years' experience.

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