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A Basic Primer on how to measure Asset Management Performance - with practical examples

If performance measures are to be meaningful they must be mindful. Mindlessly taking on the performance targets and indicators of others, or measuring whatever is easiest to measure or 'might come in handy' has not served us well in the past.

In this issue, Contributor, Ruth Wallsgrove, Sarras Ltd, UK,

- Distinguishes between ASSET Performance and ASSET MANAGEMENT Performance
- Shows you what to look for to determine whether your asset management is leading to good outcomes TODAY, and
- What to look for (and do) to continue to improve DECISION MAKING in the FUTURE.

A must for every Asset Manager,

Pages 945– 948

And while on the subject of Asset Management Performance, let's distinguish between mere Compliance and the development of an Asset Management Culture.

This is the first of the "Lessons Learnt" from New Zealand's experience with Asset Management over the past ten years. Ross Waugh, Waugh Consultants, NZ, takes an honest and upfront look at what has worked and what is still to be improved in the NZ asset management experiment.

Pages 944, 949-950

Two thoughtful and practical pieces for you!

Please Enjoy!

Penny Burns

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NEW ZEALAND: LESSONS LEARNT

Ross Waugh
Waugh Consultants, NZ

Lesson 1: Culture – not merely compliance

- For an authority to capture the gains that are available through the asset management process a culture of asset management needs to be embedded in the organisation.
- Any effective culture change in an authority must be driven by the Chief Executive and senior managers, supported by the Council.
- Whilst in New Zealand Councils and management know about asset management as a result of 7 years of seminars and training, I believe that for many authorities there is still only lip-service to asset management. If directly asked I think most would vigorously deny this, but sadly, when budgets, resources, progress and attitudes are examined I draw the conclusion that we still have a long way to go in developing asset management cultures in New Zealand local authorities.

Asset Management in NZ local authority practice is here to stay, as evidenced by the requirements of the LGA2002.

Unfortunately, for many authorities the attitude is still one of achieving minimum compliance in asset management, so that the auditor will sign-off with a tick. Many of the 1998 Asset Management Plans were written by consultants, achieved compliance and then were put on a shelf never to see the light of day again. In reality this is a huge waste of time, effort and money, and the gains available through the asset management process were not made by the authorities concerned.

For other authorities, the asset management process has been driven by an individual with vision for what could be achieved. These authorities have done very well with their asset management, but when the individual leaves, tend to fall back as asset management has not been embedded in the organisation.

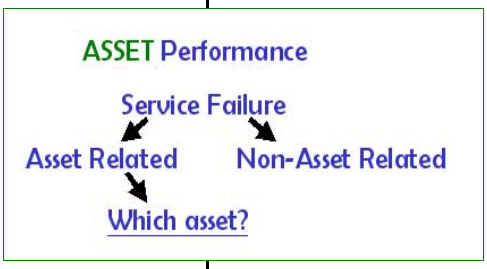
The Metropolitan authorities have made more progress in this regard and many now have dedicated asset management positions in both strategic and engineering service delivery groups.

Lesson 2: Structure

- The structure of an authority will have a big impact on the effectiveness of its asset management.
- Effective asset management requires co-operation and understanding across the Treasury, Accounting, Planning, Engineering, Policy and Economics disciplines.
- It is very difficult to sustain an effective asset management programme in siloed organisations, or those organisations with departmental performance measures and drivers in place that do not support asset management. **Cont. page 949**

PERFORMANCE INDICATORS FOR ASSET MANAGEMENT
(1. Now)

Ruth Wallsgrove
Sarras Ltd. UK



Many organisations I know are currently wrestling with the question of measuring the performance of Asset Management, or Asset Managers. Not the performance of assets, which is a different problem.

Asset Performance

Most asset-based companies have in place some indicators of current asset performance. Ideally this shows assets' contribution to service or production outputs.

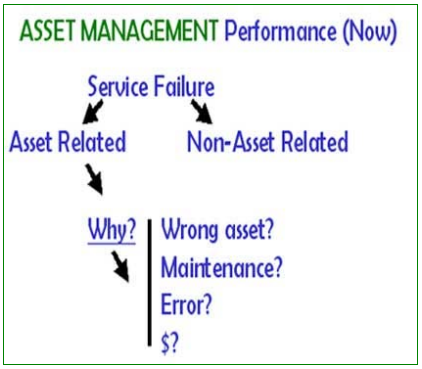
If you have a service measure of lost customer minutes, for example (as in UK electricity distribution), the chances are it's due to an asset failing, and you'll want to report by type of asset. If it's number of trains delayed (as in some rail companies), you can report how often this is due to a problem with an asset such as the track, signals or a train, as opposed to, say, drivers not being available.

Where assets aren't the main business – for example, in public sector organisations such as education or the police – it may not yet be clear how to measure whether assets are doing what they should. Working out asset contributions to outcomes is not always going to be straightforward, but at least the principle is now well accepted in asset management plans.

Asset Management Performance

To take us into the wilder world of Asset Management performance indicators, we have to look closer as those asset problems that lead to service or other outcome failures. Why did an asset fail to deliver? Is it because of what we might call an inherent asset failure – the wrong asset in the wrong place? – or because the asset hasn't been maintained properly, or indeed a failure due to the wrong thing being done during maintenance?

If we take it - and I do - that 'Asset Management'* is the decision making about what asset where, and how it should be maintained, and when replaced, while 'Asset Delivery' is about the doing of building/ installing and maintaining the assets, the distinction of responsibilities can be reflected in a simple enough distinction between performance metrics. If there's a service failure due to planning the wrong asset in the wrong place, or a failure to programme in a replacement in time, or a poor maintenance plan: that's a failing of Asset Management.



If it's due to agreed maintenance plans not being carried out correctly, or a positive 'maintenance induced failure', those are measures on the maintainers. Failing to get the right asset in place in the planned time is a measure of project delivery. *Note that an outcome failure can be something costing more than it should* – for example, getting the asset in place in time but overrunning the project budget.

ASSET MANAGEM
Service Fa

PERFORMANCE INDICATORS FOR ASSET MANAGEMENT (2. Future)

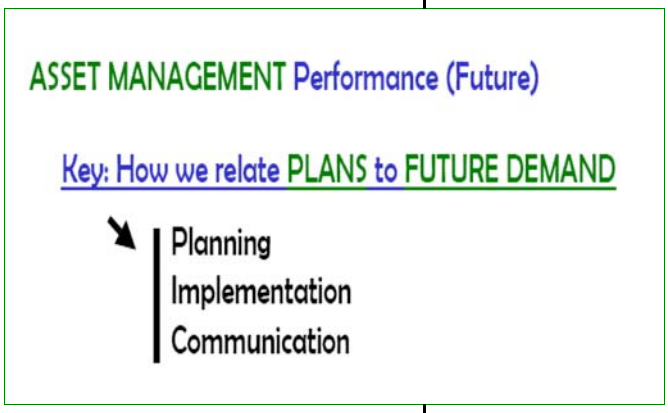
Ruth Wallsgrove
Sarras Ltd. UK

The trickiest part comes from the fact that Asset Managers inevitably work in the future. Today's performance can't be the only or even major test of how well they are working.

Asset Management Performance into the Future

Ideally, what we want to know is if the plans – by which I mean the annual AMPs, the medium and long term capital programmes, the reviews of maintenance schedules, revisions of standards, future technology strategies and so on – will deliver the service required into the future. The latter may not always be well defined. But that's certainly not the only issue in assessing the adequacy of plans.

How Good are our Asset Management Processes?



I think part of the answer is how we show how we relate plans to future demand. How good are our decision processes to come up with the proposed plans? If our methods and models are clear, we should be able to show how we come up with our answers with the inputs we used. The Board, owner or regulator can check our input data and prod our models. If we're halfway competent, they can't know more than us, not about the assets; we'll have the data and should have the knowledge, the access to best practice methods, the means to develop them for our business.

And then how effectively and efficiently the plans were implemented is the performance success of Asset Delivery, of programme and project management and maintenance.

Providing More Data is NOT the Answer

Giving other people ever more information doesn't really help them, because they don't have our resources to use it. So I would argue that some of the way forward is not so much about more performance indicators, more data, per se, but transparency about decision-making. If you like, what we 'report' should be how we go about making our plans.

Key: What we are doing to improve DECISION- MAKING

However, there is also what we are doing to improve our decision making processes. I believe there is room for good 'lead' indicators on what Asset Management is doing to develop and then embed good methods into the business. For example:

- Percentage of asset workers who have been through an introductory AM course
- Proportion of investment programme prioritised and optimised through documented AM processes
- Numbers of maintenance plans reviewed and optimised in past two years
- Planned/unplanned maintenance mix on target
- Progress on developing system models

PERFORMANCE INDICATORS FOR ASSET MANAGEMENT
(3. Measures)

Ruth Wallsgrove
Sarras Ltd. UK

*** Some people use Asset Management to mean everything** – the planning & specifying, doing the maintaining, running the investment programme - and a term such as Asset Planning to mean taking the decisions about what assets when and what maintenance schedules. I don't think it makes any real difference as long as there is clarity about who does what, but I take the point from my IAM colleague Geoff Greenland that you can't do AM unless planners and doers work together.

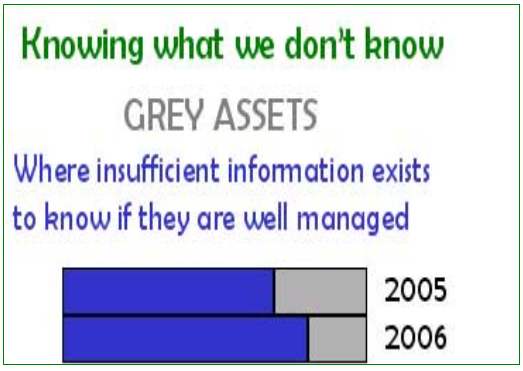
Key: We are RESPONSIBLE for our RELATIONSHIPS

We should have no problem with targets that partially measure our abilities to sell (or enforce) good practice on maintainers or project engineers. Indicators about our relationships with asset delivery functions or stakeholders, or our communication skills seem fair game to me. If we can't get our strategies accepted, we fail as Asset Managers however good they are.

For example: a 'maintenance backlog reduction' measure. This will depend both on the optimisation of the maintenance strategy and the maintenance managers' ability to manage their staff - and their staff's own performances – to carry it out. It is one very successful measure I've seen in use to show how much difference good Asset Management can make in practice.

TWO PARTICULARLY USEFUL MEASURES

I'm interested in two particular useful AM measures at the moment.



1. The first is around what we don't know. To optimise assets over their lifetime, we need to know and understand certain things, and that's much easier for some kinds of assets than others. For example, with pumps, where I started out. We know a lot about how pumps degrade and can measure drops in performance and monitor in real time parameters that indicate that they're about to break down – all the things you'd want to know in order to decide how to maintain and when to replace.

But for many assets we don't know how they degrade, what to look for to indicate degradation, or even in some cases any real data about their expected life. Some asset types fail apparently randomly, showing no relation to age or usage, and some have never yet had to be replaced so we can't say how long they might deliver. Some we can't usefully inspect, or at least not without great difficulty; and for quite a few we're not sure what in any case we would be looking for. Even if we do, and could, we may not have inspected or assessed condition in the reasonable past.

With apologies to London Underground for overextending their term, I like the idea of 'grey assets' – assets we don't know enough about to know if we are managing them well. If we know we don't know, we should have a plan to find out; and then the performance indicator should be on progress to fill in the gaps, the number of 'grey' assets converted into 'non-grey' (blue?) assets.

TWO PARTICULARLY USEFUL MEASURES (cont.)

Ruth Wallsgrove
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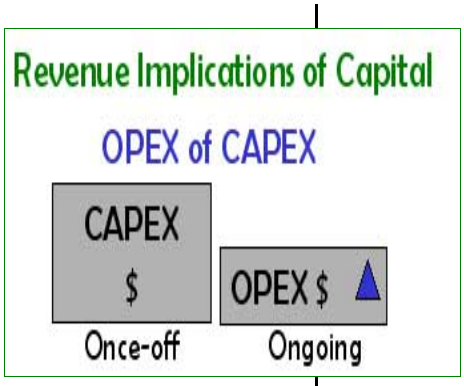
A colleague points out that not knowing should not be an excuse for doing nothing, if this means stopping the maintenance you've always done (or where applicable, manufacturer's' recommended maintenance). But it is hard to decide whether it's worth doing anything different than what you've been doing if you really have no relevant information. The point should be that such a state of ignorance should not last long – and this particular AM performance indicator should be taken very seriously.



2. My other current favourite is 'opex of capex' (or 'revenue implications of capital schemes' or probably a thousand other organisational specific terms). Reporting how operational costs should change as a result of the capital programme doesn't necessarily tell you you're optimising whole life, but at least it shows opex as well as capex was taken into account.

I suspect Asset Managers and Boards alike may not always be tying capex to opex enough – not noticing that there's a future opex increase implied in the current capital programme, for example, so that the increase when it comes is not budgeted or perhaps even funded. I am intrigued to find out how many organisations actually do take it seriously.

One company I know of here in the UK actually takes predicted opex decreases due to a project straight off the relevant years' budgets for the relevant budget holder. This naturally makes the budget holder very cautious about signing off any scheme. Increases in opex due to capital schemes, on the other hand, make other senior managers loathe to sign off such schemes. You can see how this might force everyone to think very hard about capital.

Given that it's not uncommon for the main opex budget holders – operations and maintenance – to favour capital solutions to their problems to avoid hitting their own operating budgets, I can't help thinking it's a step in the right direction. Tracking opex of capex alongside capex seems to be essential if we're really optimising for the whole of life. I think it makes an excellent key performance indicator. I realise it also requires you have a process in place to estimate and then sign off the operating costs impacts from investment projects, but then you should have that anyway!

Ruth Wallsgrove

With many thanks to Mark Benham and Jim Kennedy of RailCorp, NSW.

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Ruth is an acknowledged expert in Asset Management and Asset Information Strategy, having worked in this field for over 15 years. As a partner in Sarras, (a leading consultancy in UK utilities), and a Director of the Institute of Asset Management, Ruth has overseen the publication of the first UK edition of International Infrastructure and the First National Standard on Asset Management.

She is a frequent chair and speaker at UK Asset Management conferences and organises workshops on asset information, regulatory models and other topical issues. *(Some of her work on Information can be seen in SAM 143, June 25, 2004 and in SAM 174, Sep 2, 2005)*

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NEW ZEALAND: LESSONS LEARNT

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Following the 1989 reforms City, Borough and County Engineers became Directors of Engineering or District Engineers. The job description involved political and public interface, managing the engineering team, operations and maintenance

In the mid 1990's with asset management requirements to the fore many District Engineers became the Asset Manager. The job title changed, but the job description did not – except that additional work (asset management) was added to the role. Engineering resource reductions during the late 1980's and early 1990's meant there was little internal capacity to take on additional workload.

As a result, in the smaller authorities asset management has rarely been adequately resourced, and asset management planning has often been either completely handed over to consultants, or has been completed by an engineer making time (often out of hours) in the midst of other workload.

Lesson 3: Succession

- The underlying assumption regarding easy availability of additional resources that was valid 20 years ago is no longer valid and in the current labour market experienced asset managers are not easy to find.
- Whilst in recent years immigration has taken up some of the resource constraints, there remains an on-going requirement for authorities to practice effective succession planning to resource their asset management programmes (including the appropriate mix of internal and external resources).
- In New Zealand these issues have been recognised and initiatives are underway by local government engineering and management organisations.

Lesson 4: Systems

- Effective asset information systems underpin asset management. Systems deployed must be appropriate for the assets and resources of the authority. Systems need to be supported by implementation planning, associated processes and internal resources. A clear understanding of outputs required is needed to ensure that appropriate data is captured and maintained.
- Management support, direction and appropriate resources are required for the long term success of asset information system implementations.

Lesson 5: Resources

- Asset management programmes must be adequately resourced.
- Adding asset management to an already extensive job description is not going to get the job done.
- Changing the job title of an operational or project engineer to Asset Manager also does not necessarily make them an asset manager.
- Asset management requires on-going budget to deliver identified improvements and keep plans and processes current with evolving practice.

NEW ZEALAND: LESSONS LEARNT

Ross Waugh
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New Zealand experience shows that the changes relating to asset management have been reasonably continuous over the past 16 years. Practice improvements, continued development of community aspirations and political changes suggest that these changes will continue.

Ross Waugh, Waugh Consultants Ltd, New Zealand

Ross is an asset management specialist with over 20 years experience in New Zealand local government asset management.

Waugh Consultants specialise in the delivery of practical asset management planning solutions and the integration of AM planning with asset information systems and processes. In the past 2 years Ross and his team have assisted clients in developing their asset management planning to meet new legislative requirements.

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- Asset management budget and resource requirements are additional to historic budget requirements. For many New Zealand authorities this has not been adequately recognised.
- Small local authorities are having difficultly attracting and retaining experienced asset managers. As a result a realistic appraisal of the appropriate mix of internal and external resources needs to be made, and then funded.

Lesson 6: Continuous Change

- Council asset management practice needs to continue to develop to match these changes.
- Authorities that have adopted a process of continuous asset management practice improvement over the past 10 years have been well placed to meet the challenges of new legislation.
- Authorities that have adopted a minimum compliance approach have struggled at each new change.

Lesson 7: Commitment

- The behaviour of some local authorities in New Zealand suggests that they think that if they achieve minimum compliance asset management will eventually go away.
- Asset management as a discipline is here to stay in local authority practice. This is entirely logical given the value and importance of the assets managed on behalf of the community.
- For asset management to be successful in local authority practice it must be a commitment recognised across the organisation.
- This commitment must translate into budget, human resources, and management accountability.