AMQ International's STRATEGIC
350 ASSET MANAGEMENT

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STRATEGIES, STRATEGIES, STRATEGIES....

by

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In Part One of this two-part series on PAS 55 "Line of Sight" - the alignment of asset actions to corporate objectives - Ruth Wallsgrove showed how it was possible - by asking the right questions - to construct your AM Policy in just 30 minutes. Admittedly this assumed you had the answers to hand. (But as Asset Managers this is part of our task). The AM Policy is best thought of as a top level guide.

In Part Two, Ruth focuses her attention on Strategies - those methods that you use to address the key concerns of your organisation. (Some of these may be standards or regulations you need to comply with.) Recognising that we inherit many of our strategies, she discusses how to align these with your corporate objectives, and how to prioritise which to line up first.

As in Part One, Ruth's illustrations come from utilities (water, electricity, rail) but the basic principles of AM are common to all activities so again I am asking a number of leading local government asset managers - YOU - to review this issue to identify what modifications may need to be made to suit the rather more complex task of Asset Management in a local government context.

Enjoy!
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From corporate targets to Asset Management Objectives

STRATEGIES, STRATEGIES, STRATEGIES....

(A short primer on PAS 55 'Line of Sight' Part 2)

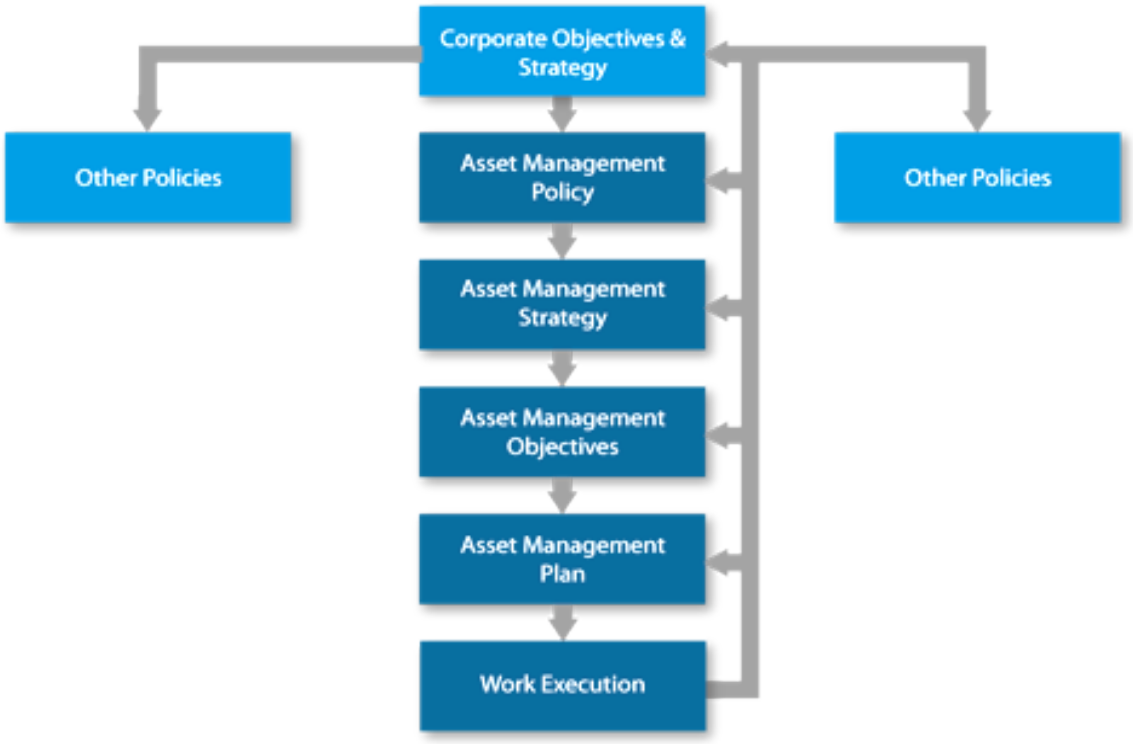
by

RUTH WALLSGROVE

PAS 55 'Line of Sight' requires that we align our asset management activities with the corporate strategy. And quite right, too. As PAS 55 defines it, asset management is:

> The systematic and coordinated activities and practices through which an organisation optimally manages its assets and their associated performance, risks and expenditures over their lifecycle ***for the purpose of achieving its organisational strategic plan [my emphasis]***

In Part 1 I looked at the top level 'Asset Management Policy', and argued it had to be a clear and intelligent response to corporate direction and issues. I don't think that's hard, if we know what we're doing as asset managers. What I think is going to be much more laborious is how to line up our strategy. Here is the summary of line of sight from PAS 55 again: you will see that it proposes that the Asset Management Policy should direct the Asset Management Strategy, and the AM Strategy is attached to the Asset Management Objectives.



STRATEGY OR STRATEGIES?

The first issue to sort out is that, while PAS 55 calls it 'Asset Management Strategy', singular, in practice, as many people have realised, the 'asset strategy' space here is actually a whole pyramid of documents. It includes everything from your highest level strategy to strategies for individual regions, systems or asset classes, as well as strategies for enablers such as asset information and training. They all have to be aligned with the AM Policy and work with each other consistently and coherently.

So what exactly does 'strategy' mean here?

I believe the role of 'strategy' (plus standards, policies, procedures) is this: *to direct us* from the organisational objectives and **our one page AM Policy** (*see SAM 349 for Part 1 of this series "How to construct an AM Policy in 30 minutes*) to an Asset Management Plan in a controlled and systematic way. Since an Asset Management Plan is the collection of all planned actions on our assets over the next year/ 3 years/ 5 years, with associated resources, money and risk, and hence excruciatingly detailed, ***it requires a great deal of directing.***

This is not necessarily how we see asset strategies at the moment

The problem is very unlikely to be the current absence of asset strategies – strategies, policies, standards, whatever we label them, the whole unholy set of constraints and instructions we inherit and impose on ourselves for managing the assets.

Quick test: how many documents does your organisation currently have that say something about what people must do with your assets? 200? 500? 5,000?

No, the issue is how to ensure that they are appropriate strategies to deliver the organisational objectives and to see that they do not merely NOT contradict each other, but that they all can be shown to actually contribute to what our organisation needs to do.

PAS 55 does not stop there.

MEASURABLE TARGETS

Perhaps unwittingly, PAS 55 lobs a grenade at our existing strategies when it not only requires that they align with corporate strategy, but goes further and suggests they have 'Asset Management Objectives', in other words measurable targets, against them. This

demands that we can quantify exactly what each strategy document will deliver: in other words, how much will they cost to deliver what performance improvement? Every strategy is essentially a business case, not just a good thing to do. We should include here not just those documents called strategies, but also standards and procedures which also direct and constrain what we plan to do to our assets.

What proportion of asset strategy-type documents in the world actually commit to delivery of a pertinent performance target for a stated cost – is it 0%, or only very nearly?

Some people suggest we work back from the objectives to the strategies: that is, we understand what we need to deliver by asset class, system, region in order to deliver the organisational targets, and then decide the right strategy/ies to deliver them. But I suspect that this is not actually possible. We can't know what the right set of targets are until we have thought how we are going to achieve them.

For example, let's say we have to improve a service, and two quite different kinds of assets are required to deliver it. Should we focus equally on both, or would it be more cost effective to focus on improving just one? It's hard to do this without thinking in some detail about what we can do to improve each of them, and the relative feasibility and costs. In other words, without working through in some detail our potential strategies for improvement. Only then can we see that we should concentrate on a performance improvement on one or both.

So it will probably be best done in parallel – thinking about substantial targets and likely strategies together, and then iterating to get the best overall set of both. But I'll go through this in some more detail to tease out what this might mean in practice.

Being SMART

PAS 55 suggests that asset management strategies should have one or more associated asset management objectives. These need to be SMART targets (specific, measurable, achievable, realistic or reasonable, and time-based); and of course they, too, must align with corporate strategy. What they should not ever do is simply restate the original corporate targets, which would not take us any further forward in deciding what to do.)

Editor:

The idea of recording how much each strategy is expected to contribute to the desired objective is also a key element of the ILM (Investment Logic Mapping) Approach. (See SAM 246 and SAM 247)

For example, if you have a corporate target to reduce service outages by 50, every relevant strategy should have an objective that 'contributes' some or all of these

reductions. I like the idea of 'contribution'; any particular asset strategy may not be able to provide the whole organisational target, but we should be able to say what proportion it will deliver (and you probably want to have some contingency in there too, so that you are confident the strategies together will deliver more than 100%).

HERE'S A SIMPLE-ISH EXAMPLE:

Assume we're an urban rail service, and the Board have agreed with the government to reduce passenger delays, expressed as an increase in the number of trains arriving within 5 minutes of the timetabled time from 88% to 90%.

If I'm the asset manager of the trains, I should of course **already know** how many delays are due to train issues (as opposed to drivers, signals, passengers, etc), and more than that which specific train issues cause the most delays. (It's likely to be doors.)

Let's say that 10% of delays are due to the trains, and that the maths stacks up that better train asset management could theoretically bring up that 88% to 89%, but in practice the cost of driving out all physical train issues is too high. Having done the sums – in other words, the team has done a great deal of analysis about what the issues really are and the options to deal with them – I propose that, with the replacement of the worst performing train door motors, I can deliver a 0.5% increase in on-time running for £100,000 within 18 months. That is, we commit to deliver one quarter of the improvements (though note trains are only responsible for one fifth of the issues, so this is generous).

It is then up to the Board to determine which of the contributions, or combination of contributions, give the best bang for the buck.

THE KEY TO SUCCESS IS CONFIDENCE

You need to be sure what the strategies will deliver, allowing for pluses and minuses either side. (Ed: Remember everything we do in Asset Management is about risk, reliability - and probability.) The Board sets the targets; it's up to AM to decide how it's going to do this across assets, systems and methodologies. They are your offerings, the objectives you set as asset managers - why would you put forward a target if you didn't already know you could achieve it?

AND CONFIDENCE COMES FROM HAVING DONE THE ANALYSIS

How do we do this? What PAS 55 does not point out is that aligned AM strategies and SMART AM objectives require that you have already done the analysis. But here's the thing:

– what is asset management good for if we don't know what we need to do to our assets in order to deliver something specific at optimal cost and risk?

Such analysis is hard work.

If asset management is your day job, the board or councillors will assume you already understand your assets. This isn't to say that you don't need to do something to improve asset information and modelling – we all do. But it won't set anyone's heart alight, or make your director happy, for you just to say you need more time to understand your assets before you can commit to strategies and targets to meet your organisation's requirements

So here's a bit of advice from someone who has been there: Don't major on offering up strategies to improve your analysis or information gathering. That's what you do **under the surface**. Major on what you can actually deliver in service improvements.

What I like about the PAS 55 concept of really taking the corporate objectives and working out the most effective ways to deliver them (short and long term) is that it forces you to align your analysis and modelling efforts, not to mention your asset data strategy. And alignment means… rejecting things which don't offer pay-offs, or which cost too much relative to other approaches. (Think criticality.)

A STEP BY STEP APPROACH

For example, take that corporate target to reduce service outages by 50 next year. from 200 to 150. What do we know about why we have outages now (why aren't we down to 150 already)? Where is the biggest problem? What's its root cause, or causes? What do we know about good solution options for those particular root causes? What does the cost-benefit optimisation (what it costs versus how much it achieves) look like for each of them? It's the same basic thinking as in a reliability exercise to optimise maintenance. Don't forget what we've learned from previous successful, or unsuccessful, attacks on service outages.

Here's a simple-ish step by step guide.

Apologies to everyone already familiar with FMECA – but of course it's a fundamental way to tackle asset issues, including deciding our strategies to deliver organisational targets.

Organisation performance target – reduce service outages by 50 next year from 200 to 150.

Step 1: What caused the current 200 service outages?

You need to understand why you have the outages at the moment. Is it a particular asset type, or even an individual asset, that gives you most of the issues? And remember there may well be causes that are not asset problems – for example, a train may be late because the driver didn't turn up for work. Or that appeared to be asset problems but weren't – the operator claimed the asset wasn't working when it was, or the customer thought there was a burst when there wasn't.

Step 2: Decide which of the current 200 are really to do with asset performance.

Ideally you'd agree with operators/ customer services/ users on causes and essentially divide up between you the strategies required to meet the organisation target. If 99% of the delays are due to drivers not turning up for work, expensive asset strategies may be quite beside the point for reducing delays.

Step 3: Have a good idea of which problems cause the most outages.

The asset problems that cause the most service problems are the ones to investigate first.

Step 4: Get a good idea of the root causes for your most problematic asset issues.

A root cause is the reason your asset failed. You are really looking for what you can do something about – after all, the root cause for everything is probably the Big Bang, but that doesn't really help you. What you're looking for is something like: did it fail because someone operated it wrongly, because it was not maintained, because it never worked from day one, because some other asset caused it to fail? Each of those points you in the likely direction of a good solution (though the best solution may not \always tackle the root cause, if there is something else quicker and cheaper to do to get round it).

Step 5: For your most problematic assets and most significant root causes – what are sensible solution options? Ideally you consider more than one option for every problem. You are looking for options that are not merely feasible (can you do them fast enough to make a difference in the next 12 months?) but the most cost effective. And this is a very good point to go over what you have already tried in the past... did the solutions work well in the past? Which worked better, which were disappointing?

Step 6: Collect together problems and solutions and assess (roughly at first) which solutions solve the most outages for the least money.

It may well be that a couple of approaches can remove the majority of your issues without costing a fortune. Use a simple table (in a spreadsheet perhaps) with a row for every solution option against what asset problem & what root cause it will tackle, the costs to implement the solution and how many service outages it will remove.

This assumes we already have good records on outages and their causes, as well as considerable collective knowledge on root causes and good solution options. If we don't – **start paddling furiously.**

Corporate targets may sometimes come out the blue – but not very often. Asset managers, I probably don't need to stress, should be thinking ahead, and already prepared to keep increasing performance and decreasing costs, working our analysis feet furiously underwater to make sure we know what we have to do.

Back to strategies

Our asset management policy document should help us start to clean up and focus our strategies. If we already know that a good way to, say, decrease service outages is to increase the reliability of critical assets through risk-based maintenance, that should guide us when we look at specific asset classes. Taking the high level policy and applying it to the most critical assets is an obvious way forward.

Standards

Almost all the physical assets I know about have associated standards. Basically, these are rules about what we can and cannot do – how thick the steel must be, the composition of the mortar, the checks we must do before operating, and so on. Standards mostly come from experience, often responses to disasters; they are often about avoiding a problem someone has had in the past. I believe we should perhaps view them as a stage on the road to good asset management: most of the time, they are better than nothing.

But most standards-thinking predates the fundamental principles of good asset management, of criticality and cost-risk optimisation. We need at some point to challenge our asset standards using the same questions we would use for maintenance optimisation, and good PAS 55 compliant asset management strategies. I suspect we will find quite a few of them are fairly sub optimal, if not actually irrrelevant to our organisational purpose....

EXAMPLE OF A FULLY ALIGNED STRATEGY

(AM Policy - AM Strategy - AM Objectives - AM Plan)

(This is an example AMCL use in teaching people about PAS 55 and Line of Sight, with thanks to them.)

A risk-based approach to maintenance will be adopted

Risk-based maintenance will be applied to our top 5 asset types

Risk-based maintenance will deliver an improvement in the failure rate of switchgear of 10% for no increase in cost by September 2015

Risk-based maintenance will be introduced at grid substations by September 2015 with the following work volumes…

However, we may still have 50 or 500 other strategies and standards still in place, and some of them of course may be legally binding or required for insurance or certification purposes. My feeling is that for most of us, attempting to clean up all the asset strategy, policy, standards & procedures documents would be an impossible task for one year, or even two. We must decide which to check, align and set objectives on first.

DID I MENTION CRITICALITY?

If criticality essentially means what gives us the most trouble – the overall greatest combinations of direct costs and indirect costs through risks – it, too, must align with corporate strategy. **To put it bluntly: if the Board or councillors don't care about something, set no statement or target on improving it, why should we?** If it doesn't give them any grief, why should it pain us? Using their assessment of what we have to achieve, we should really already know which are our critical assets and systems.

Any asset can become trouble - where up until now it performed well and cost little - so a good appreciation of criticality includes keeping an eye on all the less troublesome assets. If an approach seems to be working, to keep an asset performing at low cost, we should keep on doing it. But that's basically to say that current strategies for low criticality assets don't need to be revised first. It's the strategies for the high criticality ones that we should worry most about.

A BETTER APPROACH TO STRATEGISING

There is something odd about most current asset strategies, though, in sharp contrast to both corporate targets and best-practice asset management plans, and it's not just that they are not necessarily reviewed or revised very regularly. Where do strategies come from? Or, to make the point more cynically, what procedures do we use to develop them? We probably have some kind of process to sign them off, but how do they get worked up in the first place?

Asset planning has its formal processes; corporate planning has its formal processes. To get the right people together, to ask the right questions – we would not leave either of them to chance, or to individual prejudices.

WHO ARE OUR STRATEGISTS - AND WHAT DO THEY ACTUALLY DO AT THE MOMENT?

I strongly believe that good asset decisions come from getting the right knowledge – the right knowledgeable people – together, in a defined process (such as in risk-based maintenance optimisation, or in the processes like HAZOP that industrial organisations use to ensure plant safety).

Part of the right knowledge is what our assets are currently doing, what's working and what's not – and the realistic costs and risks. Who knows that? Well, even with the best models in the world, what things cost, and how assets are working, is something the people who actually maintain the assets usually know better than even the cleverest technical expert. Without this, our strategies are very unlikely to be optimal, or even optimisable.

So, I suspect, setting individuals in HQ to work through asset strategies is not the right way to approach them, even if said individuals already take on board the need for SMART targets and cost-risk optimisation. (Which they might see as unwarranted constraints on their freedom of expression.)

The best approach I have heard of comes from a New Zealand electricity company, when they decided they had to have a major overhaul of asset strategies. They setting up temporary working teams of the best people to take on the most critically strategic assets, including a good range of knowledge and experience in the teams – and a process to work by.

I've talked through line of sight more or less from the top down. But in fact it can't be done this way. We only really know about costs when we get to asset planning, and we only know what has really worked with our assets by working closely with the users and maintainers. It may even be that asset strategy should driven by the asset planners – identifying what doesn't work well enough, and requiring technical experts to work on new options.