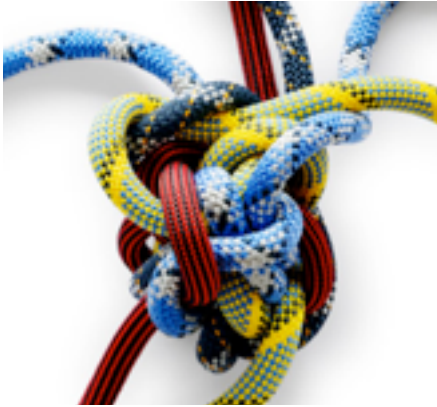


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AMQ
International's
ASSET MANAGEMENT

STRATEGIC



September 2 2013

Performance

Performance is the measure by which we deem AM to be successful, whether the subject be outsourced contracts or financial sustainability, so clearly *how* we measure is important. Here we look at both - but first a story!

“The city wanted to outsource the maintenance of the roadside verges but they wanted the contract to be performance based, so they thought about the KPIs they could adopt and decided that the best performance measure would be the height of the grass. They decided that the grass should be no more than 12 cms high. They went out to contract and the lowest tender was accepted. The contractor brought in a roller and flattened all the grass - nothing was higher than 12 cms!

Next year the city went out to contract again and they were determined not to make the same mistake. They made it clear that the grass had to be *mowed* and that it was not to be higher than 12cms. To make doubly sure that they were safe, they put in a penalty clause: if the conditions were not met, the contractor would forfeit 50% of the payment. That would do it, they thought. Interestingly, the same contractor again put in the lowest bid. The city was surprised but that was OK, they had safeguarded themselves in the way they set up their performance contract. So what did the contractor do? Absolutely nothing! At the end of the year he turned up - and asked for his 50% of the contract fee! “

Performance contracting has many pitfalls and Rob Schoenmaker, who told the story above, suggests what you need to look for and what to do to avoid some of the worst problems.

See “**Performance Contracting: a six stage approach**” pages 6-10.

Also in this issue - the conclusion to the story John Howard started last week. If measuring performance with backlogs is not the answer, what is? Answer: The use of Financial Ratios reported in the financial statements and publicly. See “**John Howard on Financial Ratios**” pages 2-5.

Enjoy!
Penny

Next issue: Blobs, dots and lines (Proof that serious asset management can still be fun)

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Quick Quiz

In the last SAM issue John Howard took the weighted average of the reported backlogs of New South Wales' and Victorian councils and extended it to the whole country to get a figure of 18.4 Billion.

This figure represents:

- 1. What we said we were going to do but haven't yet*
- 2. What we would like to do to get the assets up to scratch*
- 3. What we would like to do to get the services up to scratch*
- 4. What we would like to do to improve both assets and service*

Answer: Take your pick!

Backlog is so ill-defined and used in so many different ways that it carries no credibility.

According to both John Howard (and John Comrie who we also quoted in the last issue)

"A reported backlog is due to desiring service levels in excess of the perceived financial capacity of the organisation to provide the service levels."

Desiring more than you can afford is simply dreaming. In dreams there are no limits - but there is equally no credibility.

If Financial Sustainability is to be taken seriously, backlog figures that are, in effect, undefined, even undefinable, are of no use to us - we need consistent measures, measures that have credibility - measures that are reported in the Financial Statements.

The first act of John Howard's short play in the last issue of SAM, was entitled "Tell 'em they're dreaming", here John completes the message by providing a better way to convey the asset renewal message - the use of financial ratios.

JOHN HOWARD ON FINANCIAL RATIOS

There are four national financial indicators that have now been adopted by most jurisdictions to help decision makers focus on and comprehend key outcomes and implications of capital renewal. They are still under development but engineers and accountants can work together to improve them.

The indicators are:

- 1. Operating Surplus Ratio** – operating surplus expressed as a percentage of total operating income (excluding amounts received specifically for new and upgraded assets and contributed assets).

The operating surplus is the excess of operating income (excluding amounts received specifically for new and upgraded assets and contributed assets) over operating expenses. The operating surplus ratio provides a measure as to whether operating income is sufficient or insufficient to meet the cost of services (i.e. expenses). *It is a measure of the organisation's financial performance.*

2. **Net Financial Liabilities Ratio (NFLR)** – net amount owed by an organisation expressed as a percentage of total operating income. The NFLR is an indicator of the organisation's *capacity to meet its financial obligations.*
3. **Asset Sustainability Ratio (ASR)** – asset replacement expenditure expressed as a percentage of depreciation. The ASR indicates whether the organisation is replacing or renewing its non-financial assets in an optimal way so as to minimise whole-of-life costs of an asset. If it is 100% on average over time, the ensuring value of assets is being maintained. *The ASR measures the current status of asset consumption and renewal.*
4. **Asset Renewal Funding Ratio (ARFR)** – net present value of asset renewal and replacement expenditure accommodated over a 10 year period in a long-term financial plan expressed as a percentage of the net present value of projected asset renewal and replacement expenditure identified in an asset management plan for the same period. The ARFR is an indicator of the ability of the organisation to fund its projected asset renewals and replacement in the future. *The ARFR measure the future status of asset consumption and renewal.*

Using the Ratios

Accountants and engineers can use these indicators to tell the same story about providing services from infrastructure in a sustainable manner.

These Ratios are not perfect but the more we work with them - *and on them* - to improve reliability the better they will get.

The Operating Surplus Ratio. Comrie commented on the importance of the operating surplus ratio. “Generally speaking, if a local government can achieve a small operating surplus on average over time it should be able to maintain service levels in the future, including renewing and replacing assets as required.”

Areas for improvement

1. The operating surplus is net of capital revenues, Terminology of the operating surplus net of capital revenues is not consistent throughout Australian local governments,
2. Depreciation expense is a major factor of the operating surplus. We need to improve the accuracy of depreciation expense and report the operating surplus ratio in notes to local governments' financial statements.

Success to date

Engineers can assist accountants in ensuring the depreciation expense reported represents the service performance in the field; i.e. assets are revalued at fair value,

residual values are used appropriately and useful lives reflect the actual and not desired service levels.

The NSW Roads and Transport Directorate's 2012 Road Management Report has monitored the difference in the engineer's assessment of road asset consumption for sealed roads surfacings and pavements and unsealed road resheets with the asset consumption reported by depreciation.

Figure I shows that the difference in technical measures of asset consumption (life cycle renewal cost) and depreciation in 2012 is about half the difference reported in 2005.¹⁹ This is a great improvement in consistency of asset consumption reporting, largely due to the regulated change to reporting at fair value in NSW and improvements in data.

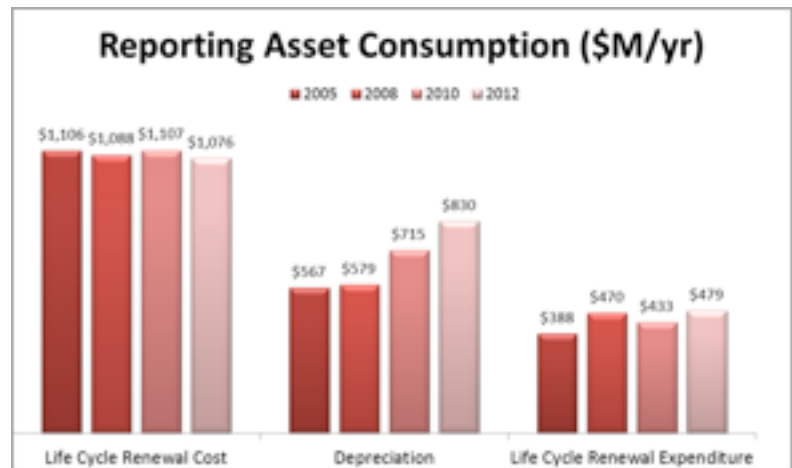


Figure I: Technical and Financial Measures of Asset Consumption.

Using the Net Financial Liabilities Ratio

The net financial liabilities Ratio is an indicator of a council's level of net debt and other liabilities relative to its annual operating income. It can tell whether a council can increase debt, for example, to fund renewal, where this is warranted.

Using the Asset Sustainability Ratio

The asset sustainability ratio (ASR) indicates whether assets are being renewed as they are consumed. It uses annual capital renewal expenditure and depreciation expense to determine the ratio.

Note: The ASR is seen as an interim measure using available data and should be replaced in time by the Asset Renewal Funding Ratio as asset management plans and long-terms financial plans become updated annually and form the basis of annual budget deliberations.

Areas for improvement

Issues in use of the ASR include the age profile of assets and variations in renewal needs each year, accuracy of depreciation expense discussed previously, non-reporting of capital renewal expenditure in local governments' financial reports and identification of capital renewal from total capital expenditure.

A council may claim that replacement of a \$10M Olympic Pool complex with a \$30 million new leisure centre is renewal. In reality, \$10 million should be classified as capital renewal expenditure and \$20 million as capital upgrade and new expenditure. We need to identify capital renewal expenditure to a material accuracy (+/- 10%) and report capital renewal expenditure and the asset sustainability ratio in financial statements as an indicator of asset consumption and renewal in each reporting period.

Using the Asset Renewal Funding Ratio

The asset renewal funding ratio is a forward looking indicator of the local government's ability to provide the service levels defined in its asset management plans, including renewing and replacing assets as required in the next ten years.

Engineers and asset managers prepare the asset management plans and expenditure projections for the long-term financial plan.

Accountants use these expenditure projections to develop financial strategies to achieve a financially sustainable long-term financial plan based on realistic and affordable service levels in the asset management plan.

ADDRESSING FINANCIAL SUSTAINABILITY

Making financial sustainability an objective can deliver results.

The first Financial Sustainability Inquiry on local governments was undertaken in South Australia in 2005. It followed from the South Australia Infrastructure Study in 2001 which concluded that "within ten years, South Australian local governments would need to spend three times as much per annum (in real terms) on asset renewal as they then were. For the past three years, South Australian local governments have undertaken asset renewal expenditure at three and a half times the level of ten years ago in real terms, and improved annual financial performance from a collective \$100 million operating deficit in 1999-00 to an operating break-even result.

What can YOU do?

Engineers have been reporting infrastructure backlogs for the past 40 years with little success in overcoming the perceived problem. Engineers and accountants have the tools to tell the same story about providing services from infrastructure. The tools are in the financial statements with improvements and addition of key information. Audited financial statements carry greater weight and public acceptance than engineer's 'wish lists'. Engineers can: (1) ensure the service levels in their asset management plans are realistic and affordable and not 'wish lists'; (2) communicate the agreed and financed service levels provided in asset management plans (what we can afford to do), with the service consequences (what we cannot do) and service risks (what may happen) arising from annual budget decisions; and (3) work with accountants to improve the accuracy and reliability of depreciation expense estimates.

Accountants can: (1) ensure the Operating Surplus (net of capital revenues) is the outcome reported in organisational reports and publicly. (2) report the Operating Surplus Ratio, Asset Sustainability Ratio and capital renewal expenditure in notes to annual financial statements. (3) work with engineers to develop asset management plans, long term financial plans and financial strategies that provide for the community's service needs and are financially sustainable over a 10 year period.

**Engineers and accountants can tell the same story.
We have a long way to go, but it can be done.**

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PERFORMANCE CONTRACTING: A 6 stage model to determine the right balance of internal and outsourced decision making

Rob Schoenmaker
Jules Verlaan

“The general perception is that autonomy of the contractor and a strong links between performance and payment will be beneficial for the principal. Unfortunately it is not that simple.”

Over the last 15 years, more road agencies explored new territory and turned to outsource their maintenance. The first step was to use private parties to execute specific tasks under direct supervision. Institutional reforms, public opinion and tighter financial means forced them seek more collaboration with private parties. More emphasis came on the use of performance-based contracts, because of the anticipated advantages of steering on outputs. In these contracts, the focus is on the results the agency wants to achieve. In the case of maintenance, the goal is to achieve those results for existing infrastructure and over a longer period.

The general perception is that autonomy of the contractor and a strong links between performance and payment will be beneficial for the principal. Unfortunately it is not that simple. Performance-based contracting also has also disadvantages and risks, especially when it is difficult to define performance, or to calculate the organisational consequences and risk of opportunistic contractor behaviour. Applying the model presented in the paper will help in identifying the preferred degree of outsourcing.

Outsourcing risks increase with the degree of complexity, interconnectedness, temporal mismatch, innovation and dynamics, and the level of the unknown.

1. **Complexity** (the interaction of competing performance requirements, giving a choice of alternative measures, like a rapid response at higher costs or an economic response with more hindrance).
2. **Interconnectedness and autonomy**; The contractor cannot always act autonomously when third parties are involved in the same network or when the contractor depends on third parties for permits, information or supplies.
3. **Temporal mismatch**; occurs when the effects of the maintenance activities only show up after completion of the contract.
4. **Innovation and dynamics**; The dynamics are visible in the changing budgets of the client, in the requirements (i.e. more emphasis on safety or economy) or in the developing technology, leading to news ways of working or even new levels of service.
5. **Knowns, unknowns and unknowables**. Examples of unknowns are the costs of finding out the cause of defects or if the maintenance that has now been planned for year X will be really necessary by that that time.

Performance measurement

Proponents emphasise the simplicity and benefits of performance management. But under certain conditions performance measurement becomes problematic. Some of these conditions are

- **Products are multivalued**: performance management carries the risk of measuring only quantifiable outputs and ignoring the values;
- **Products are generated together with others**: maintenance has a strong interconnectedness of activities: meaning that the activities are hard to isolate. Thus performance can only be partly attributed to a single actor
- **Products are interwoven**: this has to do with the interconnectedness of assets: meaning that the assets are hard to isolate. Thus performance can only be attributed to a single actor if that actor maintains all the related assets.
- **Causalities are unknown**: this is relevant when the relationship between effort and results is either not known or not visible within the timeframe of the measurement.
- **Environment is dynamic**: when the required quality is constantly redefined, performance measurement becomes problematic. It goes without saying that the above five features of maintenance and conditions for performance management conflict.

Generally, the more process steps of the maintenance process are outsourced and the more abstract (or multi-valued) the performance requirements are, the more they conflict.

Setting Limits to the freedom to decide

Limiting the freedom to decide reduces the risk of contractors taking decisions that are not fully in line with the interests of the client who, as owner of the infrastructure, is ultimately the bearer of any risk that is caused by decisions of the contractor. It may therefore be in the interest of the principal to retain some decision rights. Broadly speaking, the decision process consists of four steps:

- 1) the generation or identification of proposals for maintenance works;
- 2) the choice of the decision which initiatives to implement;
- 3) Implementation: the execution of ratified decisions, and
- 4) Monitoring: the measurement of the performance of the agents. Performance-based contracting

Performance-based contracting implicitly transfers the all four steps to the contractor. In some cases the client may prefer to decide which activities are implemented or not. The contractor can then be held responsible for initiation and, after ratification by the principal, for implementation and monitoring

Relevant aspects to identify the degree of outsourcing

Four aspects are relevant to describe the degree of outsourcing

1. The object that is outsourced. What are the scope of the physical parts that are maintained, the degree of integration of the various technical disciplines and the types of maintenance that are part of the outsourcing?
2. Performance indicators and incentives. What are the type and nature of the

indicators that are used, the payment mechanisms and other specific incentives?

3. The governance. How is the contract governed and monitored by the client?

4. The division of roles. Maintenance is a cyclic process. The question is how the various step in the maintenance process are allocated to the different actors.

This paper focuses on the fourth aspect – the maintenance process and briefly touches on aspects one and two, the types of maintenance and the performance indicators.

Note The use of the terms routine and variable (or capital) maintenance here need some introduction. Formally speaking the maintenance activities are a result from the needs to keep the performance at the required level of service. But these maintenance activities can be more or less cyclic, repetitive, cheap and well known in advance. This is routine maintenance. They can also be less cyclic, less repetitive, more expensive and unknown in advance. This is variable maintenance. This distinction proves relevant when we look at the actual degree of outsourcing by the road agencies.

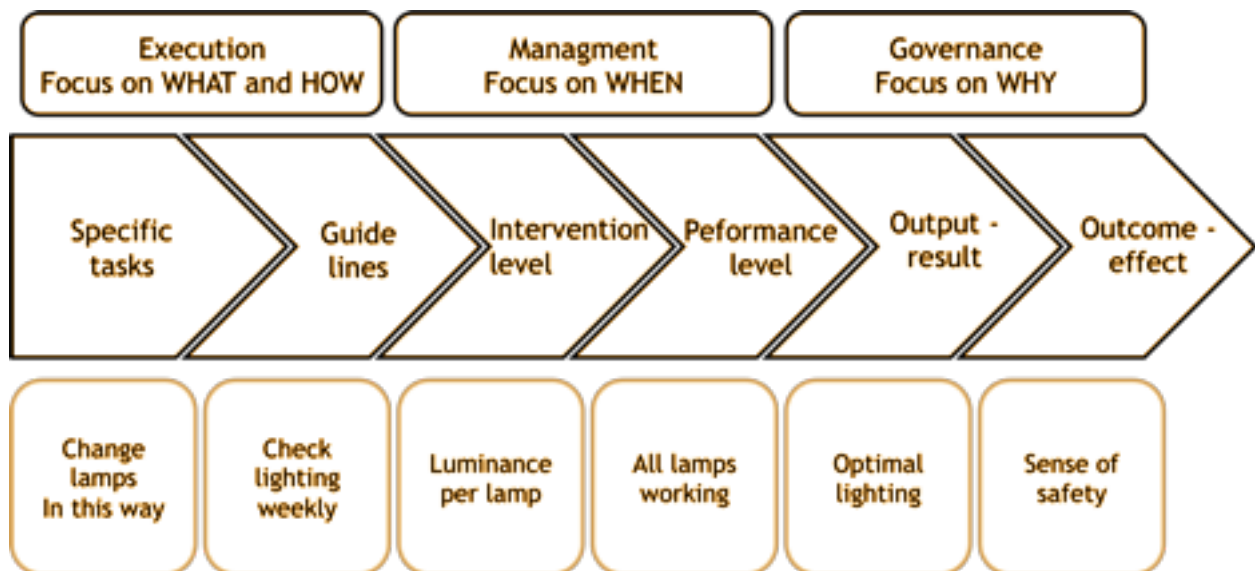


Figure 1 Levels of performance requirements (AustRoads, Development of Performance Contracts and Specifications, Summary Report 2003; Porter, T. Procurement Models for Road Maintenance 2005)

Figure 1 shows that a road agency has the choice as to which level it outsources its maintenance. It can decide the level of input driven requirements where the focus is on what has to be done and how. Output driven indicators tell the contractor when something has to be done, whereas more abstract indicators define the why of the infrastructure, and the contractor has to make sure the effects are achieved.

Introducing the Six-stage Model

The area within the dotted line of figure 2 is the maintenance process. The output of the maintenance process is the performance that has to comply with the performance requirements that are the input to this model.

The model encompasses two of the three cyclic processes referenced in many publications on this subject, namely (1) The planning and execution of routine maintenance; and (2) the identification, planning and execution of maintenance aimed at improvements. The third cyclic process (3) the identification, planning and execution of maintenance because requirements change is, in fact, a feedback loop from the effects of the delivered performance back to the goals and objectives leading to adjustments when necessary. Should the requirements change, this will show as a change in the input to the maintenance process. (A detailed, more formal description of every step in the process is provided in the appendix to the original paper available from the author)

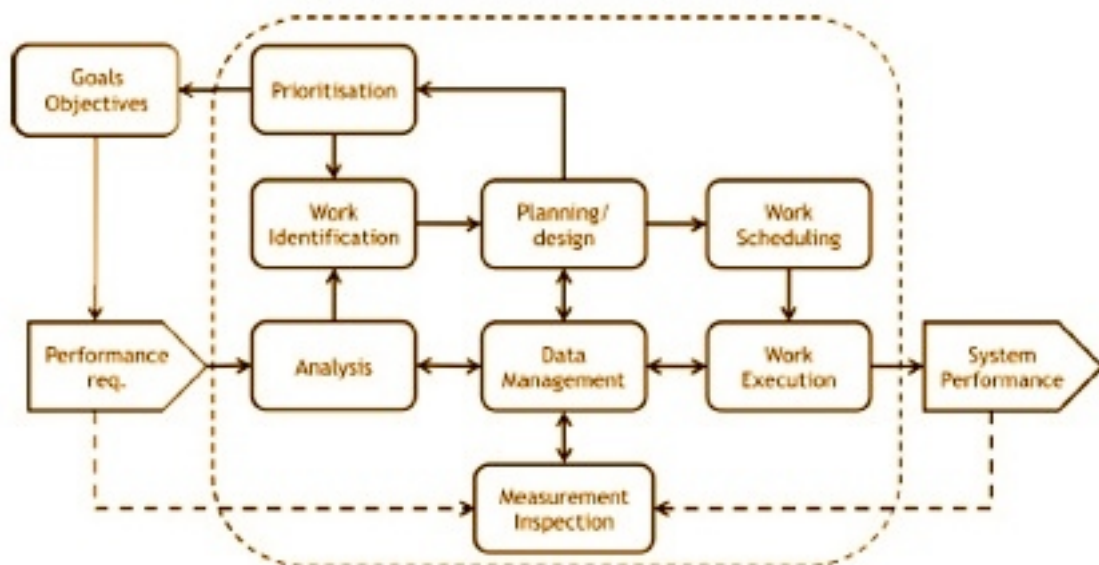


Figure 2 Six-stage model of maintenance

The steps in the right part of the model depict the short-term loop of routine or cyclic maintenance. The work is executed according to predefined plans and the data is updated. The loop with the steps analysis and work identification also includes renewal and improvement of the assets.

Based on measurement and inspection, a maintenance database is kept up to date with condition data and performance data of the assets. These data are analysed, and based on the results certain works are identified. The works are planned and budgeted while taking usage, urgency and other inventions into account. Periodically the required budget is confronted with the available budget and possibly leads to different prioritisation of works or to an adjustment of performance requirements – e.g., reducing the speed limit rather than resurfacing the road. This prioritisation leads to a more detailed planning and preliminary design. Only then the work will be scheduled and finally executed.

Application of the model

There are roughly three levels of outsourcing (See figure 3). At level C the contractor is only providing resources to schedule and execute the work. This is the minimal level of outsourcing; the client does all the maintenance management and only uses the market to do the actual work in the field. At level B the contractor has more freedom to decide to do what and when, based on the specifications by the client.

At level A the contractor is free to take all decisions that are required to keep the output at the required level.

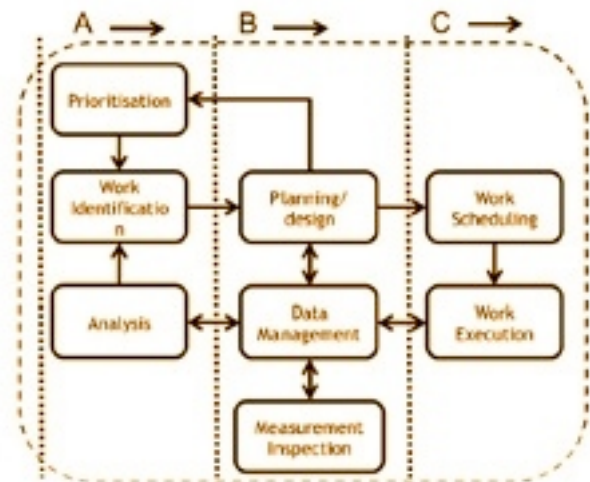


Figure 3 Levels of outsourcing

Want More information?

When analysing a certain case of outsourcing, each step of the maintenance process is evaluated choosing one of the descriptions shown in Appendix B. The degree to which each step is outsourced is illustrated in the model.

Examples drawn from the Rijkswaterstaat, (the Netherlands road authority), the highways agency in England, and Main Roads in Western Australia, are provided in Rob Schoenmaker's paper to the IPWEA Conference in Darwin "Analysing outsourcing policies in an asset management context: a six-stage model" by Rob Schoenmaker and Jules Verlaan.

The full paper is available from the authors. This article is a selection of excerpts from that paper focussing on the strategic concepts.



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