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Strategic Asset Management

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Onkaparinga: Where Asset Management Understanding Comes First

"Hey Dave, I reckon I have a combination for you that will work! That community centre that we have on the hill is used by an over 50s group but really accessibility is not good for them. We have an under-utilised facility lower down on the flat that would suit them far better with a small amount of modification. Then we could move the scouts group onto the hill, which they would enjoy, and free up a building for sale."

The call was from one of the City's councillors. Onkaparinga's Manager of Property and Asset Services, David Bernard, says that he gets at least one call a week from councillors with cost effective asset suggestions. Last week, for example, a councillor suggested designing a community centre which he said would bring people together, increase utilisation, provide better service and enable the council to dispense with a motley collection of run down buildings that would otherwise involve repair and compliance costs. 'Everyone here is very interested in asset management, from the City Manager down, and on up to the Mayor'. The City Manager, Jeff Tate, regularly reports on the work the City is doing in asset management when he speaks to the community and in his regular community newsletter.

What did Onkaparinga do that created such interest, advocacy and, yes, even evangelism, in its council? (cont. p.2)

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How to Create Asset Management Advocates

The challenge of amalgamation

The City of Onkaparinga is a newly amalgamated council and South Australia's largest local government entity with an area of approximately 518 square km and an estimated resident population of approximately 145 000 people. The current replacement cost of council buildings is $90 million and $1m is spent annually on their maintenance.

Avoiding the AIS route

The new council faced the problem common to newly amalgamated councils of bringing information together. It decided to work for a strategic understanding rather than to dive into major AIS construction. "At this stage in our development", said Dave "we question the benefit compared with the time and resources needed to populate it effectively. We prefer to spend our time to get a better 'feel' for our assets and to work with Council to develop roles and responsibilities.

Developing trust

We interviewed each council member individually. We met informally and went over the plans and documentation we had for that ward. Invariably, the councillor would give us more information, tell us about assets that we didn't know of, their condition – and their potential. *But, I guess, the most important thing we did in these sessions was to develop a sense of trust between council and staff.*

Workshop

We ran a workshop for council adressing:

- The difference between wants and needs
- What is the Council's core business and what should we fund, own purchase and/or provide
- What are Council's service delivery priorities and its roles and responsibilities?
- When is it critical or important to hold assets for this purpose… and when is it not.

Helped Council to "see" the Options

We showed them pictures of assets (ours and others) providing similar services. It helped to make the point that there was more than one way to do things. We showed them examples where the council funded and owned, but another body provided the services; examples where we did everything and examples where the community received these services without any intervention by council at all. There were examples of just about every combination of funder/owner/purchaser/provider. It went a long way to overcoming the tendency to want to 'do everything' 'own everything' and 'control everything'.

Council is now challenging the 'Status Quo'

Councillors are now challenging the status quo, asking themselves:

- What are Council's service delivery roles and responsibilities; and
- Can the demand be met by alternative means without the need for asset additions?

Community forums

We also run community forums on various topics, in which asset aspects are addressed. What we have been at pains to do in all of these meetings is to make it clear that "there is always another way" This is helping to overcome inertia. Traditional ways of doing things, such as immediately engaging architects to develop a detailed brief for a new facility before looking at all the options, are gradually being phased out."

Councillors form Asset Management Group

There is now an asset management group within Council itself to guide the development of the City's asset management plans.

Contact: David Bernard, Tel: 618 8384 0660

Priority Setting in a Newly Amalgamated Council

One of the most difficult tasks facing a newly amalgamated council is setting priorities for different tasks and services.

Onkaparinga adopted a condition-funding matrix to determine priorities for scarce council resources. Assets were classified into one of three broad priority categories

Condition Categories

(1) "urgent attention (because of potential for gain or avoidance of loss)" – about 10% of portfolio

2) "further investigation needed" - about 40%, and

(3) "fit for purpose"- about 50%.

Assets were ranged on a spectrum of asset funding scenarios (see fig below).

Those assets which were commercial, or had the potential for a commercial return, were given top priority for attention. Those that were publicly funded had the lowest. This makes sense in ensuring financial viability and generating the funds for tackling assets lower in the hierarchy.

This matrix focuses on doing first those tasks that generate the greatest cash returns and maximises the council's ability to eventually tackle all its asset issues.

Simple, Easy to Understand

This prioritisation model is simple, easy to understand and easy to explain to non-specialists.

Spectrum of Asset Funding Scenarios

Publically funded	**User Contributions**	**Corporatised (full user pays)**	**Semi-Commercial (notional return required)**	**Commercial (market return required)**
Roads Reserves Toilets Libraries Offices Depot Community Centres Fountain	Leased Community Facilities Surf Life-Saving Clubs Community Halls Country Fire Stations	Aquatic Centre Recreation Centres	Golf Courses Caravan Parks Kiosks Restaurant Rubbish Dump	Land Divisions

Contact: David Bernard, Tel: 618 8384 0660

AIS – What to do before you choose

Unless it is *usable* and *used*, the data in your Asset Information System are just so many black marks on white paper – or their electronic equivalent. It may have been expensively gained but it is *not information*. In this five part series we look at mistakes that have been made – and how you can avoid them in setting up your own database.

Part 5:

Clean Up Your Act!

Some years ago, City Rail in NSW was considering disposal of its older rail stock, the "red rattlers" which had provided service since 1927. They were costly to maintain, unreliable and lacked the amenities that current passengers desired. Peter Niven, then the General Manager, Engineering, tells this cautionary tale of their disposal problems. It seems that some vehicles were lined with asbestos, probably only a small percent – but nobody knew which ones! As a result all had to be treated as if they were contaminated and the cost of disposal was considerable.

This is the problem with unreliable information. If just some of your data is shown to be out of date and unreliable – it may be only a small percentage –the entire data base will be treated as unreliable.

The morale is: Don't collect any more data than you are prepared to maintain!

When the time does come to update, what has to be done and how do you do it? The easiest data to maintain is the data that rarely changes – ie location of buildings, acquisition dates, etc.

Some data changes in a predictable way – asset valuations in between periodic re-valuations can be indexed and existing data can be modified by an indexing formula. (The index can be a generic, such as the building cost index, or it can be derived from a market revaluation where this is carried out on a rolling basis.) The task is more difficult when a major revaluation is carried out and serious planning is involved *(see AMQ International, Dec 1998, pp4-5).*

If you plan ahead, you can design 'filters' to select data for modification on a regular basis, for example, asset condition data. You can select all assets for which the condition data is more than x years old. And you can design processes by which the data is automatically upgraded whenever the asset is acted upon.

In the absence of a filter system, an automatic update process as part of your works or maintenance schedule, or a 'shape change' by way, say, of an indexing formula – the procedure for updating your data is basically the same as the procedure for collecting it in the first place! And this can be costly.

Which is why it is worth recalling the major messages from parts 1-4 of this AIS "before you choose" series:

Summary:

1. Be Lean and Mean. Don't collect more data than you can afford to 'keep clean'
2. Never Choose a System Cleverer than You. Know when your data is becoming corrupt and what is happening to output as a result.
3. Avoid 'Serving' Your AIS. Data updating is time consuming.
4. Integrated data systems. Consider the risks of data contamination if all of your data depends on everything else. Avoid the "while you are out there, you might as well collect …." syndrome. It may be relatively cheap to collect but the update costs will destroy you, particularly if the value of the information was negligible in the first place.

Asset Information Systems – Don't get lost in the beauty of the algorithms!

Mark Neasbey, ACVM, comments on the recent AIS Series

There is no doubt we need information to help in asset decision-making. But there are many layers to this decision-making.

At one level there is what I would call an '***accounting'*** function – what have we got, where is it, what's it used for, when did we get it, who we got it from, how much did it cost, what it is currently worth, how much have we spent on it, what we've done to it and how did we get it.

At a secondary level we are interested in '***planning'*** - we want to know how it is being used, who manages it, what condition it is in and how much it is costing us, what we are doing to it now or planning to do to it into the future, how much these things might be going to cost us and maybe what its useful life is projected to be.

At a third level we are wanting to make '***decisions'*** – do we keep it and maintain it, do we get rid of it, do we change its use or do we invest more into it.

The overriding aspect in considering an AIS is what are we trying to achieve with the system. What are we going to be doing that gives rise to the need for information? What is the most appropriate way to manage that information? What information do we already have and what do we need? In what form do we need it to be able to inform and support our decision-making?

If we have not asked and answered these questions, ***from the top down***, then we risk having a system that will not meet our needs as decision-makers or planners.

Given current technology there is a trend to create sophisticated electronic data bases, some integrated with other organisational systems (through relational data base application software) or others as virtually stand alone systems.

Great in theory but, in my view, they are usually poorly defined and 'over-sold'.

AIS's can process lots of data but what does it really mean to my business?

Assets are there to support business needs. We deliver our services to customers by use of assets. **AIS systems don't have provision for information as dynamically changing as the business needs of the organisation.** Especially when you are trying to forecast resource requirements into the future and anticipate and manage risks

I haven't yet come across a system that is capable of assembling, analysing or presenting asset information in an ideal way, addressing all three levels of information need. Because I don't believe there is an ideal system. Certainly not one that can be afforded! And quite frankly I wouldn't want one.

Asset decision making requires a lot of judgement. It is not an exact science. The technology is not a panacea for replacing human judgement. Masses of processed data won't make the decision for us.

We the decision-makers have to think! Computers don't think – they just calculate!

With thinking there is risk – we may be in error in our judgement! So what?

Stay with reality and don't get lost in the beauty of someone else's algorithm – prescribe your own!

Mark Neasbey, ACVM. 61 2 9209 4143

Should you be adopting Life Cycle Costing?

Life Cycle Costing in Building Design Contracts

There has been some talk about incorporating life cycle costing into government building contracts. But so far this has not resulted in anything concrete (no pun intended). The notion of actually requiring designers to design a building to reduce the overall life cycle costs – and then evaluating bids and designs on the basis of how successful the designers have been, is still in the future.

It could be done. But the most that has happened so far under the name of life cycle costing, to the best of my knowledge, is for designers or constructors to provide maintenance schedules on hand-over. This is useful but it is not life cycle costing.

The Pros and Cons of LCC

Given that so much is said, and relatively little is actually done, let's look at the pros and cons of life cycle costing:

Pro:

- It avoids a fixation on the initial acquisition or construction costs whilst ignoring the ongoing costs.
- It enables costs occurring at different times to be evaluated on a common basis through present value discounting.
- It encourages analysis of future consequences of present actions.

Framework required:

However, for these benefits to be taken seriously, it is necessary to ensure that the benefits and costs impact the same entity. If the builder wears the costs and the user gets the benefits, or vice versa, life cycle costing does not happen.

Certain supply structures favour life cycle costing. For example, as equipment becomes more highly specialised and more expensive and manufacturers choose to lease rather than sell their products, they have an incentive to take the ongoing costs into account at the design stage. Similarly BOO contracts – and, to a certain extent BOOT contracts also – have an incentive to build so as to optimise the life cycle costs. (See "Life Cycle Cost: Optimisation 'by design' in AMQ International, Vol 1, Issue 6, p.10)

Con:

The concepts above are basically accepted. The arguments against life cycle costing are more to do with the assumptions than with the concept.

- **Data**: We do not know the decay rates that will apply in future; these are estimated from current performance. For relatively short lived plant and equipment where the components are of a constant design this is ok, but this is generally not where life cycle costing is the most useful.

- **Discount Rate**: Which to use? The higher the rate the less emphasis placed on future consequences. Craig Langston, writing in the Building Economist, March 1993, recommends that the discount rate should be based on the 'true time value of money' which, he says, will generally lead to lower rates being used, which in turn will not disadvantage future events unfairly. Some have recommended rates as low as 2% *(see Asset Management Quarterly, Issue 10, July 1996, p.17)*

- **Chosen Time Span:** When choosing between two or more options, choosing a lower life cycle period disadvantages the option with the higher initial cost. Initial costs may be higher, however, if lower future maintenance has been built-in.

Demand Assumptions:

The major criticism, however, is that LCC Models Assume that Demand Remains Constant. Actually this is done by default. LCC models are one-sided and don't consider demand at all. In areas where demand and technical obsolescence are the major drivers of replacement, and not wear and tear, LCC models are less applicable.

Application of LCC techniques can extend the physical life but they cannot extend the "useful life" (the period for which the asset is actually wanted).

However Mike Smart of the Rail Access Corporation has developed a useful 2 way life cycle model that incorporates both supply and demand aspects. Look for this in Issue 8!

How Specifications Live Forever

The US Standard railroad gauge (the distance between the rails) is 4 feet, 8.5 inches. That is an exceedingly odd number. Why was that gauge used? Because that is the way they built them in England, and the US railroads were built by English expatriates. Why did the English build them like that? Because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used.

Why did 'they' use that gauge? Because the people who built the tramways used the same jigs and tools that they used for building wagons, which used that wheel spacing. Okay! Why did the wagons use that odd wheel spacing? Well, if they tried to use any other spacing the wagons would break on some of the old, long distance roads because that's the spacing of the old wheel ruts.

So, who built these old rutted roads? The first long distance roads in Europe were built by Imperial Rome for the benefit of their legions. The roads have been used ever since. And the ruts? The initial ruts, which everyone else had to match for fear of destroying their wagons, were first made by Roman war chariots. Since the chariots were made for or by Imperial Rome they were all alike in the matter of wheel spacing.

Thus we have the answer to the original question. The United States Standard railroad gauge of 4 feet 8.5 inches derives from the original specifications for an Imperial Roman army war chariot. Specs and bureaucracies live forever. So, next time you are handed a specification and wonder what horse's ass came up with it, you may be exactly right.

Because the Imperial Roman chariots were made just wide enough to accommodate the back-ends of two war horses.

From the Internet – source unknown.

Ed: My thanks to Nichole da Silver, Queensland Health, who got it from Peter Hubbard, Will2Win, who got it - well, you get the picture!

GLOSSARY

Life Cycle Costing/Terotechnology

Life Cycle Costing is a framework for evaluating design options on the basis of all of the costs that the asset will incur over its lifetime. Present Value Discounting is applied to all of the costs to account for the fact that a dollar today is worth more than a dollar tomorrow. Life cycle costs include the initial purchase cost, ongoing maintenance and periodic updating. Some studies include operating costs.

Life Cycle Costing is sometimes referred to as "Terotechnology" but terotechnology is really the 'science' of life cycle costing; it is concerned more with the analysis of component data and derivation of the appropriate component life cycles than with application. Terotechnology is a more common term in manufacturing industry where it is applied to analysing the lifespans of relatively short lived plant and equipment rather than longer lived infrastructure assets (see discussion below)

Discussion (see also page 38)

The concept of a trade-off between investment or maintenance NOW and a greater amount of investment or renewal LATER is a key concept for asset managers, as is the idea that all actions taken now, have cost consequences that need to be taken into account. The problem is how to do this.

Life cycle costing is, strictly speaking, only applicable where it is possible to determine a clear and finite lifespan. The analyst identifies all of the significant costs of ownership, predicts the consequences of these costs, converts future costs into present values and then selects the option which has the lowest life cycle cost, ie the lowest present value. This can involve some 'trial and error' type testing of the consequences of different materials, maintenance levels, etc. through which the life of each option is determined.

Clearly the shorter the life of the asset options being considered, the easier it is to determine life spans with some accuracy.

This is why, in practice, life cycle costing is applied in manufacturing and process industries but rarely is used for buildings and infrastructure, despite many arguments being raised for the concept of life cycle costing itself [see ref 2]

For longer lived assets the lifespan, while finite, is indeterminate. Here, a variant of life cycle costing is appropriate. This is variously called 'life cycle planning' or 'life cycle management'. It puts its emphasis on optimising the costs and benefits of treatment options available to the asset manager at any particular point in the assets life. It is a management tool, rather than a design choice tool. (Cf "Renewal" p.16)

A few selected references:

- *Asset Management Quarterly*, Issue 10, July 1996, p.10 "Why aren't we life cycle costing"
- *AMQ International, Vol 2, Issue 2*. "Life Cycle Asset Management" Neil Tucker, winner of the Worley-GHD award.
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