AMQ International's

STRATEGIC # 330 ASSET MANAGEMENT

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Community Service Levels: Part 3
Two practical case studies with lots of examples

In our earlier examples of approaches to customer service levels, it has been apparent that councils are having major difficulties in the following areas:

1. Defining exactly what is a 'customer' service- and differentiating it from technical service.
2. Defining 'levels' - and therefore in being able to cost different levels of service
3. Being able to migrate thinking from 'asset centric' activities to 'service centric' activities.

So, in this issue I want to focus on the issue of defining, understanding and managing at different levels. We have two excellent examples to guide us in this:

Community Service Levels: Forget '4 walls and a roof' - Think Function! by Renuka Ranaweera and Ashay Prabhu, Assetic **on pp 3-7**, with examples drawn from council libraries

and

Managing for Options: Addressing a situation that refuses to Quo - part 3 of his introduction to Community Service Levels, by Mike Raby, Fairfield Council, **on pp 8-12**, with examples drawn from local roads

and do read **"Thoughts from the Coffee Shop - MIlkshake Mistakes" p.2**, which is very relevant to our work on Community Service Levels.

And, as always, please consider - and enjoy!
Penny.

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Thoughts from the Coffee Shop

Milkshake Mistakes

When McDonald's wanted to improve sales of its milkshakes it hired researchers to figure out what characteristics its customers cared about. Should the shakes be thicker? Sweeter? Colder? Almost all of the researchers focused on the product. But one of them chose to ignore the shakes themselves and study the customers instead. He sat in a McDonald's for eighteen hours one day, observing who bought milkshakes and at what time. One surprising discovery was that many milkshakes were purchased early in the day. What is more the buyers were always alone, they rarely bought anything else beside the shake and they never consumed the shake in the store. The breakfast shake drinkers were clearly commuters, intending to drink them while driving to work. Gerald Burstell was the researcher and, as he and his colleagues noted in "Finding the Right Job for Your Product" their essay in the *Harvard Business Review*, the key to understanding what was going on was to stop viewing the product in isolation and to give up traditional notions of the morning meal. Berstell instead focused on a single, simple question: "What job is a customer hiring that milkshake to do at eight AM?" If you want to eat while you are driving, you need something you can eat with one hand. It shouldn't be too hot, too messy, or too greasy. It should also be moderately tasty and take a while to finish. Not one conventional breakfast item fits that bill.

This story is told by Clay Shirky in his new book "Cognitive Surplus" (Penguin Press, NY, 2010) and he points out that the other researchers made two kinds of mistakes, things he calls "milkshake mistakes". The first was to concentrate mainly on the product not what the customer wanted to use it for. The second mistake was to adopt a narrow view of what type of food is eaten for breakfast.

When I read this, I realised how very true this can be of things that we do in asset management. A beautiful example of how to avoid 'milkshake mistakes' was given by Julie Nimmo in her article "Collecting and Using Community Value Information" in SAM 328 when she recommended that for parents using a park to let young children safely run free, the ideal 'resting space' is not your typical park bench but rather a low wall that parents can rest on whilst keeping an eye on their energetic youngsters. Yet how many of us might automatically assume rest = bench?

In this issue, the article by Renuka Ramaweera and Ashay Prabhu focuses squarely on '*what the asset needs to do*' rather than '*what the asset is*'.

For too long asset managers have focussed, perhaps not unnaturally, on the shape and condition of the asset. We have, of course, always known that the purpose of the asset was to provide service but we have assumed that that service was best provided by having an asset of excellent quality and so have concentrated on asset condition rather than functionality, or what people want to **do** with the asset. This has, in turn, meant that the tools we have developed - life cycle modelling, condition assessment - have been shaped around asset condition and not around the community services provided.

However, over recent years subtle changes have been developing in our traditional LCC and condition assessment tools, and we have also started to develop other tools, such as service planning, which are now being integrated to provide a genuine asset solution to functionality and service issues. And, to my mind, few are doing this more successfully than Ashay Prabhu and his team at Assetic.

Here, by way of illustration, is an application of their service centered approach to an asset management framework, using as a case study a set of council libraries. This was presented by research developer, Renuka Ranaweera at the IPWEA Conference in Canberra in September. A full copy of her very interesting paper, "Service Centric Infrastructure Service Delivery Planning" with full detail of the tools used, is available from Renuka at rranaweera@assetic.com

Community Service Levels -

Forget '4 walls and a roof' - think 'Function'!

by Renuka Ranaweera
and Ashay Prabhu,
ASSETIC Australia Pty Ltd

Three tools are combined to produce an Asset Management plan optimised for community service. The first is a service planning optimisation tool, *mySpot*, used for current service level analysis and demand prediction of a specific service; the second is a property management matrix, *iconCUR*, a multi-criteria decision making model that is used to justify major investment decisions, and rank these decisions within a building portfolio and the third is a life cycle modelling tool, *myPredictor*, used for long term financial and service level analysis and also the generation of short term capital works prioritisation programs,that many of you will be quite familiar with as it is in use in many councils. Life cycle modelling is important but it comes at the end of the process - not at the beginning.

A service centric approach, Step by Step: A Public Libraries Example

Public library service is one of the important services that local councils provide and maintain for the benefit of the community. Public libraries serve the needs of a diverse population and provide a range of services from book, audio and video collections to computer and internet facilities and library programs serving the needs of special groups such as newly arrived migrants, young children or the elderly.

STEP 1: identify the functional areas that support the delivery of specific services and the attributes that those areas need to be successful.

Functional Space	Attributes
Front entry/orientation	Display stands, newstands, lounge
Service point	Service desk
Collection areas	
0-4 years	Collections/toys area/story time
5-11 years	Collections/games area
12-17 years	Collections/shelves/desks
General Collection	Collection
General Computer Area	Computer Areas with internet
Quite Study Area	Preferable separate area, quiet, desk/chairs
Multi-purpose rooms/ programs	E.G. Story time, homework club, language clubs, crafting with a storage space for furniture
Staff area (back of house)	Staff restrooms, kitchen, etc, storage, server rooms, loading bay
Amenities for library users	Ladies/Gents restrooms, baby change
Exhibition space	separate space for exhibitions
Commercially let space	cafe/bookstore, etc
Outdoor Play Space and Program Areas	enclosed play area, preferably able to be monitored from inside
Car Parks	for exclusive use of library users

STEP 2 - Analyse condition, capacity and functionality aspects and corresponding physical space requirements for each specific service

Condition, capacity and functionality frameworks were developed and physical space requirements were calculated for example - the functionality or fit for purpose rating of each functional area was assessed by council staff. Each indicator which was considered to have a significant effect on the overall functionality of a given functional area was given a weighting factor and evaluated on a scale from 1-5. Multiplying the weighting by the rating provided an overall measure of the functionality of each space. The mechanics of this process was greatly eased by the use of the mySpot model to keep track of the indicators and the ratings.

STEP 3 - Determine the desired service level for each service

In this council there were five libraries and there was considerable variation in the functionality of the different areas. In workshops the librarians considered where functions were considered to work well, and where they worked badly, and thus to choose - via a process of internal benchmarking - a functionality level for each area that suited their needs. Take, for example, the functional area dedicated to computer and internet access. Service levels could be varied by the number of computers per intending users that were provided and the time allocated to each user (which across the libraries varied from 15 minutes to 40 minutes). Changing the time allocation and the number of computers varied the service levels. Each service level had a different space requirement and cost associated with it.

A user satisfaction assessment was carried out by library staff on a sample of users to verify the choice of functional service levels chosen by the staff workshops.

STEP 4 - Consider the ability of the facilities to meet the desired service level on an ongoing basis (investment decisions)

Having considered, by comparing successful operations in different libraries, what the desired levels would be, the next step was to analyse the facilities in terms of their ability to provide these levels in the light of projected population and demand increases. Renuka used the iconCUR model which uses primary criteria if condition, utilisation and reward (...) to map the property status and track changes over time. In this way it was possible to determine low condition/low utilisation areas which presented opportunities for disposal or reconstruction for another use; high condition and high utilisation areas - which lend themselves to being retained and extended, low condition and high utilisation - suggesting renovation and preservation; high condition and low utilisation - presenting possibilities for re-use and adaptation and medium condition and medium utilisation - where reconfiguration was a possibility. Over the years the building condition deteriorates, utilisation might change due to technological or social reasons and stake holder interest and hence reward might gradually diminish after short term expectations are fulfilled. These changes for any building can be tracked to determine the best investment decision at any point in time to improve the building's long term performance. The iconCUR model was applied to all five libraries.

STEP 5 - Managing and budgeting for the long haul

Libraries have to compete with other council assets for funding. Even maintaining a funding allocation is difficult in today's climate. Funds have to be justified by showing the effect of reduced budgets on long-term service levels.

We use myPredictor for this purpose. MyPredictor uses building condition, capacity and functionality of functional spaces as service criteria and treatment decisions (renewal, functional upgrade and expansion) are made based on the values of these criteria. The life cycle progression path, which describes the transition time of an asset from providing the current level of service into the next lower possible level of service is defined for each service criteria.

A treatment decision matrix is used to trigger treatments when one or more service criterion/criteria reaches a certain stage along the life cycle path.

MyPredictor enables projection of the likely condition of the asset for different budget levels, AND also forecasts community satisfaction with the services being provided.

DISCUSSION

This is a very interesting treatment of service delivery. Apart from libraries, where else has it been applied?

Renuka: We have successfully applied it to many services, for example maternity and child care, neighbourhood houses and leisure services - and Assetic is now developing a functionality focused specific aged care and housing module which is scheduled to be released in early January.

What are the key problems that you face as a developer?

Renuka, Working from the outside it is sometimes difficult to see the differences in functions that are quite obvious to the users. For example - collections. These vary greatly with the age of the library visitor. So it is very important to spend the time in talking with the librarians. It is necessary to go quite deeply into what people want from the service.

What are the major problems you have encountered in implementing your approach?

Renuka: There are a number:

Assessing functionality. We ask the users to assess the how well each area is functioning. What we have discovered is that we need to probe a little more deeply when they report that a particular area is not being used. Often the conclusion they draw from this is that they can dispense with the area. However, it may be the case that the need for such an area is real but there is something wrong with the provision - e.g. a reading area may be greatly needed, but not used in a particular library because quietness is a necessary attribute and the reading area is located next to the children's play area. So it is necessary not to accept the first response but to ask a few questions to make sure it is right.

Different priorities. Within each organisation there are many different users and they all have their own priorities. Sometimes it takes a lot of time and patience and discussion for them to come to general agreement. It is important not to rush it.

Budget allocations. When it comes to optimising the budget, the possible answers will depend on whether budget allocations have been made for each library individually or for the library function as a whole.

There will always be important issues outside the model. whilst most users would like to think that a model can answer all questions, in practice, the answers have to be applied with a bit of common sense. For example, an individual facility may require extensive remodelling or upgrading - but how do you continue to provide a service while this is happening? This may modify the desire outcome.

What, in practice, have you found that people most appreciate about the modelling approach you have developed?

Renuka: They really like the fact that we can incorporate environmental sustainability and social issues as well as the economic or asset management issues within the one model. This integration is required of councils but is often quite difficult otherwise to achieve.

What would be your advice to those wishing to adopt the models?

Renuka: The models are available and can be adopted by councils but it should be recognised that to apply them cannot be done solely within the asset management section. The service planning tool requires talking with users to determine what is required and what is acceptable to the community.

The authors:

RENUKA RANAWEERA Renuka has over 10 years of local and international working experience in Asset Management, sustainable built environment and environmental engineering. She is a researcher and model builder and is current working on developing an integrated Service Delivery Planning Toolkit for local governments which includes a service delivery assessment framework and a service decision model.

ASHAY PRABHU is an experienced Asset Management Practitioner, working primarily with local governments. He has developed Asset Management Policies, Strategies and Plans based on the various state guidelines. Ashay is also pioneering a unique concept of Total Asset Management Framework for all infrastructure implementations around councils in Australia with 27 fully mature sites practicing a service delivery model for all asset classes.

Doing *what we have always done* is going to cost us *what it has always cost us - or rather, with scarcities and rising prices, even more!*

The only way to manage is to create new options. And this is what Mike Raby discusses in this, the third part of his introduction to Community Service Levels, entitled

Managing for Options:

Addressing a Status Which Refuses to Quo with examples drawn from the Management of Local Roads

by Mike Raby, Fairfield Council, NSW

Two primary cost drivers in any asset maintenance or renewal process are the material and labour inputs required to do the job; and the methodology chosen to implement them.

The easiest option available to Works Guy is to forget that the cost drivers exist and fight bravely for the Status Quo. This can be best achieved by pleading with Finance Guy for increased budget allocations. It's a sort of "I'll keep doing what I've always done and you'll keep paying for it" type approach. Good luck with that.

Under the new regime which applies in NSW where Rate Pegging is the norm, councils may request permission from the State Government-based decision makers for special increases in rates above the General (pegged) Rate Increase. By this method it is theoretically possible to garner the extra cash needed to fund the work required to alleviate existing backlogs.

However, in order to receive a Special Rates Increase (extra cash above the norm) it is necessary to prove, by some method, to both the State-based Division of Local Government and the Independent Pricing and Regulatory Tribunal that the residents of one's Local Government Area actually look forward to paying more for the purpose claimed. This is an eminently reasonable requirement. We serve the people. It is however obviously difficult in the extreme to actually achieve given the extensive consultation which would be needed to demonstrate broad community acceptance of the proposed deal. It is not a likely solution in the short term.

It does have some real potential in the long term. However watch out for the odd Lionel Murphy type who, before he hands over his hard earned cash, will try and trip you up with tricky questions like asking why you don't try building and maintaining roads a different way. Troublemakers like Murphy are unlikely to be satisfied with any answer predicated on the precedent like "because we've always done it this way" argument.

The next cab off the rank is a similarly brave attempt to convince your rate payers that the Level of Service currently provided to them is grossly profligate in your view and should be decreased forthwith.

You would of course need to be quite clever here and convince them that it's not your fault, but theirs. They have unreasonable expectations. They have been drinking champagne on a beer budget. They have been living beyond their means. They will need to tighten their belts. I'd love to be in the room when you try and explain that the best solution you could come up with is to make their roads less safe and to give them more sporting fields that they can't play on.

The options of lowering levels of service, or completely decommissioning some assets and ceasing their services altogether are genuine and need to be considered. Again however the major issue is likely to be one of achieving successful and widespread consultation which immediately puts such options into the medium to long term basket at best. It won't happen overnight.

A third option is to change either the material inputs, or the methodology, or both. This option is within the ambit of Works Guy to affect in the short term.

By inputs and methodology I really mean the following things: the materials used to build or repair the asset; the way the thing is put together, the way day labour teams are configured; the way day labour teams are given targets and missions to guide their independent actions and decisions; the way contractors are utilised, etc.

Some Examples of the Third Option at Play

1.Change the Materials – Aggregate Base Courses

Fairfield Council has moved to the use of 100% recycled aggregate as a base course for all local pavements. All concrete and asphalt materials are recovered during renewal work and transported to Council's Sustainable Resource Centre. Approximately 140,000 tonnes of such material is reprocessed via crushing and screening operations prior to reuse as base course material. Stabilisation, if required, is achieved by pugmilling with a required percentage of aTriple Blend mix of 60% Portland cement; 20% Steel Slag and 20% Fly Ash.

Results – This product has proved to be highly efficacious in our local road context and is now supported by definitive engineering testing and trialling, published in the 'Green Spec' 2010 edition. Economically, the recycled material has a positive price differential of more than 50% versus virgin equivalents. Environmentally, the product achieves a large reduction in embodied energy (less CO2e produced) and represents the beginning of a sustainable source of aggregate.

2. Change the Materials – Asphaltic Base Courses

Over the past five years Fairfield has also moved through a trial process to full acceptance of asphaltic base course material incorporating up to 75% recycled aggregate for appropriate local roads.

Results - This is an economically effective option with a positive price differential of 20% - 25% versus virgin equivalents. Comparative environmental performance is listed in the table opposite. Engineering testing and performance data for the recycled asphaltic base course is provided at Annex A in the original paper (available from the author).

	Virgin asphalt (RAP 0%)	Recycled asphalt (RAP 70%)	Recycled asphalt (RAP 95%)
Embodied energy (MJ/ton)	3.14	1.33	0.60
Inherent energy (MJ/ton)	2.32	0.70	0.12
Greenhouse gas emissions (kg CO_2-e/ton)	66.73	53.26	48.45

3. Change the Methodology – "Carpet Tiles"

Over the past two years Fairfield has been operating a trial utilising the rubberised sheet chip seal product, known as the BRP Road Patch, developed by Angela Broom in South Africa. This product is referred to as 'carpet tiles' by the Fairfield works team primarily because that is what they look like and that is pretty much how they are used. The sheets of asphalt are simply laid atop a damaged existing wearing course using a light coating of emulsion to glue them in place.

Anyone who has attempted to run their road network to the point of failure would be aware of the 'pothole effect', that undeniable sign that the pavement's time is up. We have all no doubt attempted to stave off the inevitable by sending the pothole crew on the trip to fill the existing holes only to resend them on the same trip the next week because the potholes refuse to stay filled. The problem with that approach is not only the wasted effort involved. It is more so the ongoing failure to keep water out of the base course. If water continues to successfully ingress then the failure spreads like a cancer until the base course becomes involved and destroys more wearing course at an accelerated rate. It continues rapidly until deep lift renewal is the only option left. The 'carpet tiles' are a very simple means of keeping water out because they overlap and effectively seal the original pothole failure after it has been filled using the normal methods.

Results – The sheets, because they are 'in addition to' to the existing methodology, represent an increased direct cost for dealing with potholes. There is also, in Fairfield's case, an increased cost from an extra single labour input required to deal with the additional traffic control forced by the additional time on the road required by the team to notonly fill the pothole but to locate and seal the sheet.

There is however a fair bit of the **Spend More but Pay Less** theory at work here. The trial has extended to approximately 700 pothole type failures on the local network. The earliest 'tile' was in fact laid 3 years ago during a pre-purchase trial. To date there have been no failures in any case where the tile has been laid correctly on a properly selected failure.

The trend strongly indicates a potential ten year effectiveness under local conditions. This means that proper early intervention utilising this method, in the Fairfield context, is expected to effectively stop the deterioration of the pavement by the pothole process. This will enable some road sections to be deleted from the annual renewal program for a similar period.

4. Change the Methodology – Permanent Pavement –

A future project which is currently under development at Fairfield will be to develop a local version of the Permanent Pavement concept. This concept has been under serious *development in the USA and was the subject of an AAPA study tour in 2010. Some of their excellent work is referenced in the original paper (available from the author)*

The concept states that there exists a Fatigue Endurance Limit (FEL) for each pavement type. This limit is defined as

"The stress or strain level below which no fatigue damage originating from the bottom of the pavement occurs" (APAA 2010).

In short, the theory, if correct, can be interpreted as meaning there must be a pavement type (for each location/traffic combination) which is thick enough and strong enough that it should not fail at a deep level; or in the marginal analysis, it might fail but only at extremely long time intervals. APAA reports that attempts to build such pavements are bearing fruit.

Given this news Fairfield is joining the push. Our most likely candidate is a 250mm thick asphaltic base course. This would be sealed with a 30mm asphalt wearing course which is religiously replaced by milling every 8 to 10 years. This material/methodology mix, if perfectly done should in theory keep the base waterproof and functioning in perpetuity.

The initial capital cost of such a pavement is obviously higher than we currently pay but the future renewal costs (30mm mill and fill) are extremely low in comparison to the existing base course replacement method of renewal. There will be a break even point which is yet to be identified. However in an effort to minimise the upfront initial capital cost and to also increase the environmental sustainability of such pavements Fairfield will also attempt a tricky double by converting our existing Pugmill to the job of making our own Warm Mix Asphalt from recycled aggregates for use as future base courses.

Conclusion

Works Guy, because of the close connection with assets, networks, and community has a detailed local knowledge of where stuff goes wrong and why stuff goes wrong. This sometimes extends to a deep knowledge about who really wants what, where they want it, and more so what will actually work. Given a balance of free rein, support, appropriate risk management, and a little corporate courage, this knowledge can be used to challenge the Status Quo, in whatever form that might currently take, in order to arrive at a more financially, environmentally, and socially sustainable future.

Mick Raby is Manager City Works, Fairfield City Council. He was appointed City Works Manager in 2005. He holds a Batchelor of Economics degree from the ANU undertaken following a full time career in the Australian Army. He may becontacted at mraby@fairfieldcity.nsw.gov.