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Three Case Studies

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From Mindless Cog to Creative Input:

Using Consumers and Suppliers in the Asset Management Solution

Once workers were simply cogs in the machine. The mass production system also treated consumers as cogs with a 'take it or leave it' attitude. But today, knowledge workers contribute to the solution, and consumers and the community are no longer willing to be merely passive recipients of goods and services, but are demanding a say in what services they get, what quality and at what price.

In this issue we present three case studies of agencies that,

by treating their consumers, their contractors, and their own people as thinking, creative, individuals have achieved superior asset management outcomes.

- ❑ **South East Water** found a better solution to a water supply problem by actively using consumer consultation and a willingness to consider, nay, a *focus on*, providing exceptional customer service.
- ❑ **The Shire of Yarra Ranges** achieved superior outcomes by focussing on the relationships between the client and provider in their outsourced contracts.
- ❑ **The Department of Human Services** has developed World Class Fire Risk Management Guidelines by recognising that cost effective solutions are promoted by allowing individual flexibility and encouraging the exploration of options.

Each of these case studies is an Award Winner in the International Asset Management Competitions, 1998-1999.

*Researched and written by Dr Penny Burns, AMQ International.
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South East Water

Involving The Consumer in the Solution Results in Cost Reductions of Almost 50%

■ *The Situation:*

Alternative needed to a high cost, low quality water supply system.

The Bunyip Main Race (BMR) is an open channel that supplies a large number of rural customers in the Pakenham corridor, south-east of Melbourne. The channel is owned and operated by the Melbourne Water Corporation who, because of the high maintenance cost and poor water quality of the BMR supply, approached South East Water Limited with a proposal for abandoning the channel and developing a solution for an alternative supply for these customers. South East Water is a water reticulation company, one of three serving the Melbourne metropolitan area. It shares a common boundary with Melbourne Water along the Pakenham corridor.

■ *What the Customers Wanted:*

Better Services at No Extra (or Minimal Extra) Cost

Out of 5 options available, the preferred option by customers was to maintain the Bunyip Main Race and their existing pipelines that had previously connected them to the channel at no cost, or to incorporate them into a new pipe network at minimal cost. Reliance on tanks and bores by some or all customers was not considered acceptable service.

■ *What the Corporation Wanted:*

Safe Water Supply, Reduced Operations and Maintenance Costs.

The customers' preferred option involved continued use of the Bunyip, which was unacceptable to the supplier because of the low level of water quality and high operating and maintenance costs. A piped supply was the only option that met the quality requirements

of the Corporation and the service requirements of the customers but it was not attractive to the customers because of the high cost involved.

■ *The Challenge*

The dilemma faced by Melbourne Water and South East Water was that, over the history of the Bunyip Main Race, up to 200 intervening customers had connected directly to the BMR and relied on its continuous water supply. Customers ranged from those using water for commercial applications such as poultry farms and abattoirs, to conventional household use. The BMR had also become an integral tool for fire fighting within the area.

When news of the proposed closure of the BMR became known to customers, it prompted an immediate reaction from the public that led to SEWL and MW to implement a public consultation program to negotiate an acceptable outcome to all parties. The challenge was to determine a suitable win-win outcome for all parties, i.e. to provide a suitable alternative supply to customers at a minimal, and acceptable, cost.

■ *Meeting the Challenge*

Meeting the challenge involved SEWL in:

□ *Conducting extensive consultation with all stakeholders at all levels*

Through an initial public meeting, followed by a representative committee that identified and explored options, then working through local/specific options with focus groups. Two members from each of the five regions affected were selected to represent customers in that region and much of the early consultation was undertaken with this group whilst alternative arrangements were investigated.

■ *Tailoring the design to suit the needs*

1. Using existing pipe network to reduce costs.

In consultation with customers, SEWL Assessed the state of the existing BMR private extensions to ensure that they were in suitable condition for SEWL to take over. Data on pipe lengths, diameters, material and even their location was sometimes very unreliable. Using a combination of digital mapping data, field investigation and site surveys a database of all existing private pipelines was developed. Using the existing pipe network data and customer location plans, the proposed mains supply scheme was designed so that it would allow all existing customers to connect to the new scheme. Hydraulic modelling was used to determine the suitability or otherwise of existing mains.

2. Modifying system demand to reduce costs

Determining what was a reasonable demand to use as the basis of peak design flow was difficult as no reliable metering data existed at the BMR off-takes. Instead, consumption data from each of the metered properties was used. Consumption varied according to whether customers were classified as rural residential, rural industrial/commercial. Also many customers had two sources of water; the BMR in combination with rainwater tanks. This provided a difficulty as a piped supply of cheap, potable water meant that customers may begin to rely more on this new source rather than unreliable rainwater tanks. To account for this uncertainty, an extra 33% was added to the peak demand.

Demand scenarios were analysed to avoid over design. Supply pipes were sized to as to provide the minimum acceptable pressure at the adopted peak design flow. SEWL was prepared to forego the normal urban standard of minimum 15 metres supply pressure in preference to a BMR customised minimum standard of 10 metres for each customer, and

it was prepared, in the BMR scheme, to downgrade the strength of pipe used. This did increase the risk but the design was acceptable as

- ❑ Most existing BMR customers had a back up supply in rainwater tanks and thus a supply interruption would not prove critical
- ❑ The recommended maximum pressure is a guideline only and the manuals allow water authorities flexibility of pipe classes in rural areas
- ❑ The use of class 12 pipe in preference to the normal class 16 had economic benefits and would substantially decrease the total capital cost of the scheme.

3. Risk Management in Pump Choice

Two options were considered in the design of the pumped (pressure boosted) regions of the scheme. The cheaper option was adopted with a standby pump in the area subject to bushfires.

4. Liaison with Council

Liaison with Council regarding the location of the water mains in the road shoulder (and therefore avoiding trees) enabled significant installation cost savings as well as minimising environmental disturbance during construction.

Once a viable alternative was developed with all stakeholders, including MW and SEWL, the customers, the Country Fire Service, Council and local politicians, all customers were asked to agree to the proposal. Individual letters with a plan of the pipe network configuration was sent out to each customer to be signed and returned to SEWL. Due to extensive prior consultation, greater than 80% of customers responded for the scheme to proceed.

■ *Re-examining costs and revenues*

Local contractors submitted pipe-laying rates considerably lower than those experienced in urban situations and this had a significant impact on the overall scheme cost.

On the revenue side, the project highlighted the issue of unaccounted water (i.e. unpaid for water). The BMR being an open channel made unauthorised abstraction relatively easy. SEWL also identified some properties without water meters and in some cases standpipes were also un-metered. These issues have now been addressed.

■ *Adopting Innovative Pricing*

Funding of the new scheme was made acceptable to users by negotiation and by recognising the potential for new users to join the scheme. Under the arrangement

- SEWL and MW provide the “up-front” capital to install the new works
- Customers pay an annual service charge together with the current volumetric rate to cover the capital and operating costs of the scheme.
- SEWL to operate and maintain existing pipework outside property boundaries.
- Existing customers to be responsible, where necessary, for reconnecting their internal facilities to the new pipework.
- New customers that were fronted by the new pipeline were asked to pay a contribution charge to connect and then the annual service charge and volumetric charge thereon.

A financial model for the scheme was developed and the charges fixed to ensure financial

viability for the scheme over a 25 year period based on the estimated capital costs and an expectation that 150 new customers would connect to the scheme over the first 12 years. (In the event, 85 new customers have already been connected)

■ *Measures of Success*

Success measures include

- Acceptance of the scheme by virtually all users (against initial rejection)
- Reduction of the capital cost from \$3.4m to \$1.86m
- Growth exceeding initial expectations
- Excellent hydraulic and structural performance of the pipe network.

The project also produced a unique insight of SEWL’s rural customers and by working with them in deriving an excellent solution, has brought the organization closer to these customers. Projects such as these gain customer loyalty and provide the foundation for an ongoing mutual benefiting relationship.

Contact: Denis Santamaria, Manager Assets & Engineering Division, South East Water Limited, 61 (0) 3 9552 3601



This project, submitted by Denis Santamaria and his team at South East Water has won the

MCP AMIS Pacific Award for Excellence

The judges applauded the innovative use of both engineering and financial re-design and the close co-operation reached with the customers.

Shire of Yarra Ranges

Involving Contractors in the Solution Pays Dividends

The Shire of Yarra Ranges submitted three short case studies in support of its general proposition that taking a co-operative approach to asset management with their contractors had led to significant savings and better planning information.

■ *Origins in AAS27*

When the State Government required a mechanism to measure the performance of local government assets, AAS27 (Asset Accounting Standard 27) was introduced. Not realised at the time, by many councils or the State Government, was that

“information for AAS27 is not independent, but is in fact an outcome of implementing sound Asset Management policies and systems.”

Much of the data captured for AAS27 was not detailed enough, nor in a form that could be accessed by operational staff, no update systems were put in place rendering a great deal of the data useless and lacking integrity. Most of the asset categories required further work and funding to be brought to a level where they would be of benefit to operational activities.

■ *Inappropriate Data Collection*

The rush to comply with AAS27 put the cart before the horse. Data was collected before its role in the management of assets was understood. Complicating the picture was that at the same time as councils were struggling with the new accounting rules, other things were happening – council amalgamations and the requirement for councils to compulsorily put their maintenance tasks out for competitive contracting.

■ *Contractor Can't Manage the Assets*

Initially, like many other councils, the Shire Council had thought that the contractor could play a major role in managing assets. But early tenders showed that contractors were reluctant to invest in the business infrastructure required to manage the vast amounts of data and complex systems that might become redundant if they lost the next tender. They came to realise that not only did Council have the business infrastructure for this task but

it was Council's responsibility to carry out strategic functions including long term planning, life cycle management and financial plans.

■ *Case Study 1 – Contract Revision*

Council had allocated a budget of \$100,000 to implement a pavement management system but the scope of works was estimated at between \$135,000 - \$140,000, a gap of \$35,000 plus.

Liaison with the Contractors discovered a contract requirement for two road network “Present State Condition Surveys” (PSCS). The initial survey (PSCS) was video based, had never been viewed and was of no benefit for analysing the network, defining failures or had the ability to be interrogated or to analyse the data.

Through negotiations, the two road maintenance contractors agreed to make a contribution in lieu of the survey and agreement was reached through a contract variation securing the Council an extra \$30,000. This was a win-win arrangement, saving the contractor time and money and it enabled the Council to build a better data set and system.

Council agreed to forward reports generated from the system to Contractors to help with operational and maintenance activities and the Contractors agreed to provide condition reports in a compatible format for input into the PMS for updating purposes.

Both planning and operations functions benefited from this arrangement which was brought about by co-operative discussions between contractor and client.

■ *Case Study 2. Street Furniture Information*

A similar process was followed for street sign and furniture information by eliminating a contractor requirement for information that was, in effect, useless for management purposes, and, through contract variation, applying the differential to better information collection.

■ *Case Study 3. Asset Management Referral Strategy*

Improvement in the asset management data base through the information collection made

possible by the re-direction of contractor payments has had flow on effects. Of the 307,200 phone inquiries the Council receives per annum, 82,660 or 27% are directed to the Asset Management Section. In addition, a further 80,000 or so come directly to the AM Section. This totals over 90,000 calls and it is estimated that 78% are related to specific asset maintenance/systems issues.

Analysis of the calls determined what systems were affected. Making the relevant asset management information available and accessible to the Customer Service and Operational areas means that about 35% of calls can be answered before referral. Calls relating to Vic Roads responsibilities are included in this category. Not only would this reduce the total amount of calls to the AM unit, it would improve credibility of council since more callers' inquiries would be answered at first point of contact.

Contact:

Kevin Gallagher, Team Leader Asset Management Systems, Shire of Yarra Ranges, 61 (0) 3 9294 6727

This entry, submitted by Kevin Gallagher and his team at the Shire of Yarra Ranges has won the



GHD-Worley Award for Asset Management Excellence

Judges commented that the Shire had shown initiative in reworking its contracts when the requirement for the provision of "Present State Condition Surveys" was shown to be of no management value, and to work with its contractors to generate a more useful database with provision for ongoing updating.

Capital Management Branch, Dept Human Services

Designing for Staff Involvement in the Solution

■ *The Situation*

When the Victorian Building (Amendment) Regulations were introduced in 1997, they included retrospective legislation that required the provision of a number of fire safety enhancements – such as the installation of sprinkler systems in residential care facilities and smoke alarms in all residential properties.

The consequence of these regulatory changes was that the Department (and the organizations it funds) inherited or used portfolios of buildings that had varying levels of fire safety. Some of the buildings required substantial upgrades to meet the requirements, particularly legal and duty of care obligations.

Approval was sought and given to prepare Fire Safety Risk Management Guidelines. But what form should they take?

■ *Options*

In terms of options, the Department could not very well “do nothing”, it had a duty of care. It could have complied only with the requirements of construction at the time of construction without consideration of retrospective legislation and its guidelines could simply have said this. But the fire safety risks were considered too high for what would have been merely short-term savings since the changes would need to be made eventually anyway.

The preferred option was to tackle the issue properly, but it was perceived that

“little could be gained by tackling the fire risk management problem without first developing the appropriate stan-

dards, benchmarks and criteria for determining success against which the progress of any rectification strategy might be assessed.”

The Guidelines were to be designed to make this possible.

■ *The Approach*

The first step was a detailed international literature search and statistical analysis.

The research indicated that no such guidelines existed anywhere in the world.

The statistical analysis however was useful in highlighting high risk issues. The Guidelines were based on the findings of the literature search and an understanding of

- The physical processes that cause fire
- Likely scenarios for fire development
- Relevant aspects of human behaviour that affect responses to an emergency such as fire
- Relevant legislation
- Available methods used to combat fire and the effects of fire.

The guidelines were to place a greater emphasis on the minimisation of the outbreak of fire and fire prevention – as this was deemed to be the most cost effective strategy.

Emphasis was also to be placed on staff training, the development of evacuation systems and development of comprehensive maintenance plans for fire systems. The broad range of facilities and building types was also considered.

The research indicated that substantial savings would be gained by grouping “like” buildings together and therefore developing a guideline to meet the specific requirements of the “like” building types:

- ❑ community based houses (generally for people with a disability);
- ❑ congregate care facilities;
- ❑ secure facilities;
- ❑ hospitals and day care centres; and
- ❑ rental general (high rise) and other housing).

Additional technical guidelines were also required including the Engineering Guideline (an auditing tool) and Fire Statistics Review.

Accreditation from the Building Control Commission was sought for the Guidelines, it required detailed quantitative analysis of the guidelines by a qualified fire engineer to ensure that the ‘deemed to satisfy’ elements of the Building Code of Australia had been met. Accreditation was achieved in 1998.

■ *Success Criteria*

In its criteria for success, the first criteria that the Branch set was

- ❑ That any resulting guidelines *should not be prescriptive* but *should promote individual, flexible solutions* and *enable options to be explored to ensure the most cost-efficient solutions* to a fire risk management problem.

Other success criteria included:

- ❑ That by implementing the Guidelines, service disruptions during upgrading works were minimised, thus permitting better client and community access to services.
- ❑ That the useful life of Departmental facilities was extended and optimum functionality either maintained or improved.
- ❑ That the Department, by implementing the use of the Guidelines, achieved duty of care responsibilities.

The initial guidelines were issued in December 1998 in an ‘interim’ form, specifically because it was intended that the guidelines be tested in use for a period of 12 months to enable a full assessment of their suitability and comprehensiveness during that time. Comments are the basis for current review and evaluation.

\$75.5 million was allocated to upgrading fire safety for the period 1997/98 to 1999/2000 and another \$75m is likely to be spent. In the light of expenditures of \$150m, the cost of Guidelines – at approximately \$60,000 – to ensure the money is well spent and can be audited and evaluated, would appear to be extremely cost beneficial.

Contact: Megan Broome, Manager, Research Policy & Investment Management,
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This entry, submitted by Barry Paice, Megan Broome, and Ray Joppich has won for the Department of Human Services, the P&O Facilities Management Award for Excellence.



Facilities Management

P&O Facilities Management Award for Excellence

The judges commented favourably on the rigour and scope of the study.