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ASSET MANAGEMENT COUNCIL

VALUE DRIVERS IN ASSET
MANAGEMENT

Demonstrating the Value of
Improved Asset Management
to a Regulator

Value or Values of Effective
Asset Management

Maximising Value from
Property Assets

Effective Asset Management
Systems for Intangible Assets
- Maximising Value of IP using
Asset Management Concepts



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ERNST KRAUSS

EDITOR IN CHIEF

THE ASSET, MARCH 2023

The topic of Value from or generated by Asset Management gets the Asset Management Community continuously excited. The core question of course is: "What is Value"? My observations based on many discussions with Asset Managers and Asset Owners, as well as by attempting to define value through studies. I conclude from those that Value is as diverse as the Asset we manage through an Asset Management System.

For the majority of Organisations it Value is direct financial outcome. This can take many forms – avoiding investment (CAPEX savings), increasing efficiency (OPEX savings), improving Safety (reducing risk hence less financial exposure) and there are many more diverse examples that encompass Infrastructure, Councils, Public and other Utilities, Industry and Manufacturing, virtually all that own physical or non-physical Assets. An Asset Management Framework and System defines Objectives that are to be achieved by this Asset Management System. Therefore, value must be defined either directly or through strategic objectives.

It is often overlooked that Values must be in some form measurable, which is of course the aim of all activity outcomes. Values are often a statement that has no such metrics attached and therefore cannot be measured and sustained or improved. I often use as an example for Value definition the "Value of a Beach." What is the Value of a Beach? The question is about the Stakeholders (those that use a Beach), what do they expect from a Beach and why would they use this particular Beach?

If a Council is responsible for the appearance and maintenance of a Beach, it would have an Objective to make

it attractive to Stakeholders. There is now Social Value that is important. This Social Value may have further spin offs, which may result in more people seeking Residence in an area with good Beaches, hence ultimately the Council revenue will go up, and with it the Value for the Suburb.

Of course, there are many other Value drivers that are inherent or associated with Asset Management. In reviewing articles and essays about Asset Management and Value, it emerges that perhaps expectations of Value generation through Asset Management have been too great. A study in Europe from about 10 years ago shows the Value of Asset Management was indicated to be 7% (about 70k EUR per 1M investment or less, much less than the anticipated 20%). The value of reducing risks to an organisation by implementing an Asset Management System was not well addressed. Perhaps an Industry study in Australia would provide a better understanding of which Values are improved and generated through Asset Management. There are many reports on individual achievements. But my hypothesis is that Asset Management has the potential to create value in different areas, regardless of where Asset Management is applied, based on these dimensions:

- Business and Economics
- Social aspects (internal and external to the organisation)
- Financial and Risk (in the widest sense)
- Technology and Technical
- Data, IP, Information, Reporting

What do you think? The topic of Value in Asset Management is also subject to current working groups in the GFMAM and the Asset Management Council. Perhaps you can contribute to the discussion? We value your communications and look forward to seeing you at AMPEAK in Sydney in April!



FROM MY DESK: CHAIR'S LETTER

**NATIONAL CHAIR,
TOBY HORSTEAD**

VALUE DRIVERS IN ASSET MANAGEMENT

The fundamentals of asset management include value, alignment, leadership and assurance. Value is the much sought after result or outcome from good asset management practices.

Realisation of value has become a focus for asset management; and the ability to demonstrate value to an organisations leadership can determine the success of an asset management improvement program.

Reflecting this focus the AM Council's Framework for Asset Management has value or values included some 30 times through the publication. The Global Forum on Maintenance & Asset Management (GFMAM) published "The Value of Asset Management to an Organization"

The GFMAM defines value drivers as "Any activity that has a direct impact to the performance, the cost and/or the risk, and thereby to the realization of value"

Reflecting on the ISO definition of Asset Management - "the coordinated activity of an organisation to realise value from assets" – A focus for me is the management of assets through a coordinated and structured approach having the potential to add cultural, assurance and alignment value for an organisation.

I would argue that improved organisational culture, alignment and integration can be easier to realise immediate value from than demonstrating the return on investment or asset performance outcomes. The latter can take time to measure, but a more integrated business working together with a focus on agreed Asset Objectives can be an obvious early improvement.

So maybe the value driver is not how to add value from management of assets but how an asset management approach can improve an organisation.

Remember – an Asset is anything that adds value, perhaps anyone who adds value is an asset manager.

The opportunity to learn, share and become more valuable is nearing with AMPeak 2023 returning to Sydney for the first time since 2015. The event will provide an international AM experience as we welcome GFMAM members who are meeting prior to AMPeak and will be attending and presenting at the conference.

Asset Management is an enabler for driving value from assets. For individuals growing your capability in asset management will make you more valuable.

Toby Horstead

National Chair, Asset Management Council.



ARTICLE 1 – Demonstrating the Value of Improved Asset Management to a Regulator

Ashley Dunn, Essential Energy

ABSTRACT

Demonstrating the value of good asset management decisions can be challenging at the best of times. Essential Energy, responsible for one of the largest electricity distribution networks in Australia, faced a submission to the independent economic regulator at a time of significant pricing pressures from customers. The challenge was demonstrating the proposal targeted the right work at the right time for the right cost, delivering optimal outcomes for customers.

To meet this challenge, Essential Energy applied a robust, value-based asset management methodology to optimise its capital expenditure in electricity network assets. The outcome was a five-year, \$1Bn portfolio of optimised investments, which achieved a 19% reduction in capital expenditure while maintaining operating expenditure and improving the value delivered to customers.

This paper will focus on how the changed approach to risk and asset management was

developed, aligned to customer values and corporate objectives, and applied to optimise a portfolio of investment. Essential Energy has continued to embed this framework within the business, providing the platform for improved asset management decisions.

Keywords: Value, Benefit, Asset management, Regulator, Portfolio optimisation

INTRODUCTION

Essential Energy operates and maintains one of Australia's largest electricity distribution networks to customers in regional, rural and remote New South Wales (NSW) and parts of southern Queensland.

As a regulated electricity distribution business, Essential Energy is subject to economic regulation by the Australian Energy Regulator (AER) under the National Electricity Rules (NER). The provision of electricity supply to distribution customers is a standard control service and is subject to revenue controls determined by the AER for a regulatory period of five years.

Essential Energy has used increasingly sophisticated approaches to asset management to improve decision making. The focus of this was using value-based decision making to demonstrate the value of capital investments in standard control services for the upcoming 2019/24 regulatory period. This included more rigorous assessment of the value of investments, optimising a portfolio of investment and benchmarking against other models and utilities.

SETTING THE FUNDAMENTALS

Asset risk management

The Asset Risk Management procedure supports management of Essential Energy's network assets in line with the Corporate Risk Management Framework. A key aim of the procedure is to support a consistent approach to network asset risk management from a network investment and portfolio optimisation perspective. It provides:

- Contextualisation and additional granularity required to support network asset risk management
- Guidance on requirements for options analysis between risk treatments
- Guidance on required levels of documentation, including before and after risks for preferred treatment options.

Value framework

The Appraisal Value Framework supports management of Essential Energy's network assets

in line with the Corporate Risk Management Framework and Investment Evaluation Procedure. It is designed to be used as a tool to guide risk-based decision-making in areas such as network investment optimisation. It allows non-financial risk mitigation such as safety, compliance, network reliability, reputation and environment to be assessed alongside financial risks and benefits on a common economic scale.

This Appraisal Value Framework sets out the fundamental cost of consequence assumptions that are used to determine the common network risk value. A consistent approach was applied to determine the net value delivered by an investment, as shown in Figure 1.

BUILDING THE PORTFOLIO

Understanding the current state of investments

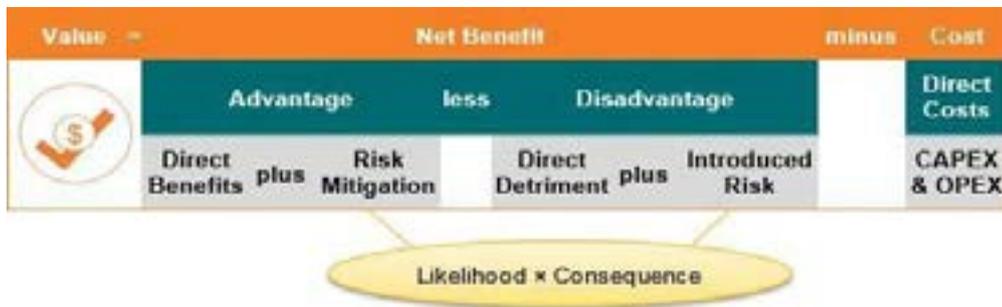
Capital investments in standard control services include replacement, capacity augmentation and connections. Replacement expenditure was the focus of the changed approach, as it forms the majority of Essential Energy's standard control capital expenditure. The portfolio of investments was developed using the existing investment portfolio as a starting point, and using bowtie risk diagrams to understand what causes and consequences the controls treated, and which alternative treatments were available.

Differentiating assets

As Essential Energy's network spans a significant portion of NSW, there are many factors that influence the performance and condition of our assets which need to be considered. Asset condition and asset consequence differentiators were developed to represent the different ways assets behave across the network. By understanding this variability, we can better target investments in high-risk areas.

Condition differentiators are factors related to the condition of an asset, and relates to probability of failure both now and in the future. Some examples of condition differentiators include in-ground decay zones and distance from the coast (where corrosion is likely to be more prevalent).

Figure1 – Value calculation



Consequence differentiators are factors related to the asset or the operating environment that influence the likelihood of a consequence occurring or the magnitude of the outcome. Some examples of consequence differentiators include bushfire zone, number of customers affected for network reliability, and population density from a public safety perspective.

Creating alternatives

Subject matter experts were then involved to advance the portfolio by identifying varying alternatives (options) and new opportunities for the existing programs. After being empowered with the flexibility

of risk differentiators, they were challenged to develop alternatives for the lowest and highest reasonable levels of expenditure giving consideration to factors such as failure rates and deliverability. Deferring expenditure was also considered to provide a baseline from which the value of each option was able to be calculated. For several investments, particularly programs with significant expenditure or value, a greater number of alternatives were explored. These alternatives were documented in Investment Cases along with key assumptions, failure rates, capital and operating costs and expected performance and risk outcomes.

SETTING A CAPITAL EXPENDITURE CONSTRAINT

A number of steps were taken to establish an appropriate capital expenditure constraint. This started with our stakeholder engagement, which identified customer pricing and affordability as of significant concern (with reliability coming in close behind). Modelling was performed to understand what level of capital expenditure would be required to achieve customer prices outcomes in alignment with our corporate objective of real reductions in network charges.

Figure 2 – Steps taken to set a capital expenditure constraint



Essential Energy commissioned a top down challenge, which assessed network risk under varying network investment scenarios for the 2019-24 regulatory period. The objective of the model is establishing the minimum level of investment required to maintain the existing level of network risk reflected in the bottom-up build. The model sought to identify the changes to the economic costs and risks associated with a proposed investment scenario to allow the potential for under and over investment to be tested, and the outcome of the model has informed the capital expenditure constraint placed on the portfolio.

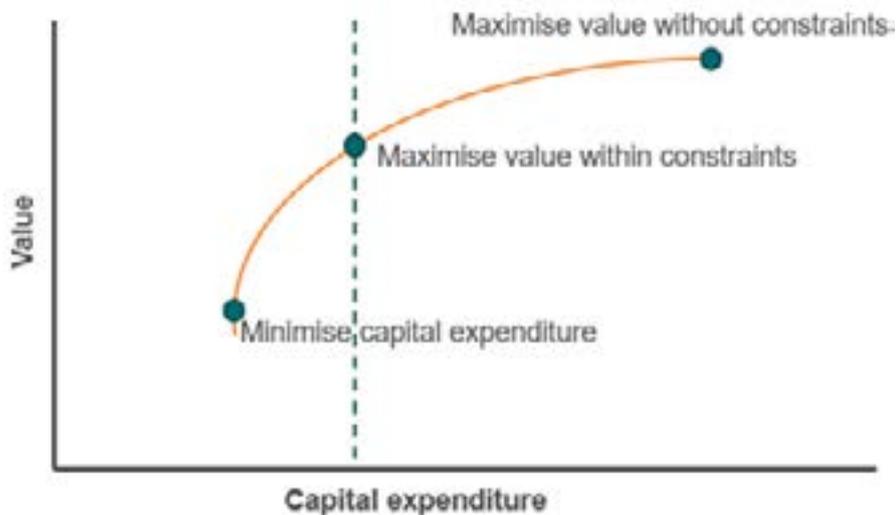
A number of efficiency improvements were expected to be delivered by the introduction of new systems and processes that will enable Essential Energy to deliver work more efficiently and better target investments to achieve similar outcomes at lower cost. An allowance was also made for investments which were required for safety, compliance with legislative or regulatory requirements, ensuring system capacity and customer connection requirements.

Long-term sustainability was also considered by analysing the expected life of each asset compared to the annual

replacement rate. For example, an annual asset replacement of 2.5 per cent of the asset population with a typical asset life of 40 years is reasonable from a sustainability perspective. This was also tested against investments made by other electricity distribution businesses, as discussed in Benchmarking.

Finally, a review of the incremental additional value delivered by the portfolio. As shown in Figure 3, there is a diminishing value return for additional capital expenditure. The final capital expenditure constraint balanced constraints on customer pricing and maintaining risk and performance.

Figure 3 – The efficient frontier for a portfolio of investment





OPTIMISING THE PORTFOLIO

The bottom-up options and alternatives are valued using an Asset Investment Planning System. This system has been configured with the values in Essential Energy's Appraisal Value Framework to allow the systematic assessment of multiple financial and non-financial benefits.

The system utilised mixed-integer linear programming to optimise the value of an investment portfolio with regard to objectives, while staying within constraints (I. Tamimi, 2016). Whilst a bottom-up build makes the best decision for a single investment, it is isolated in determining this outcome and hence the total portfolio can be conservative in nature. By utilising the system, a top down approach can be applied to the bottom-up portfolio by applying financial constraints. This proved to be a consistent and repeatable process, with optimisation resulting in a combination of investments which provide improved value relative to the bottom-up build.

Clear objectives were set for the portfolio to determine whether an optimisation is successful. The chosen objectives include:

- Serve customers at the lowest long-term cost

- Maintain safety and reliability
- Maximise value delivered to customers from our investments
- Sufficient capacity to meet customer growth requirements
- Compliance with legislative and regulatory requirements

As recommended by ISO55002, an iterative approach was taken to ensure the implementation meets objectives around cost, risk and performance. This was achieved through regular discussions with stakeholders, performing sensitivity analysis on the constraints and key parameters in the value framework, and the flexibility to manually adjust the portfolio to account for factors that could not be captured by the model.

The approach provided assurance to the AER that assets were being managed to provide an expected quality of service for customers, while risk and performance were being managed at a lower cost through improved asset management decision making. This was achieved by setting a capital expenditure constraint which maintained performance, and optimising investments within this constraint to maximise value.

BENCHMARKING

The AER uses a replacement expenditure (repex) model to understand the capital required for non-demand-driven replacement of an asset with its modern-equivalent, where the timing of the need can be directly or implicitly linked to the age of the asset. This model is dependent on the five-year Regulatory Information Notice (RIN) data that Essential Energy provides annually.

In practice, at a population level, age may be used as a proxy for condition and health. At an individual asset level, Essential Energy uses asset condition assessments to inform its investment decisions. As a result of the new approach, maintaining previous replacement rates and replacement age may not necessarily be the optimal decision for meeting objectives and delivering value to customers.

This allowed Essential Energy to present a fair comparison between the regulatory proposal, the top-down challenge, the repex model and the bottom-up build. This comparison was used to demonstrate that the portfolio of investment was prudent and efficient.

ENGAGING WITH THE REGULATOR

Essential Energy invited the AER to visit Port Macquarie and get a first-hand understanding of our expenditure proposal. This visit involved:

- presentations from the team preparing the proposal
- visiting our test laboratory to share the challenges faced with some existing network assets and the steps being taken to prevent the same issues in the future.
- visiting a zone substation, to share an understanding of the drivers of asset investment.
- a field trip to a section of network which highlighted some of the difficulties managing vegetation.

Following the submission, a team from Essential Energy visited the AER to further explain the proposal and answer questions. This strong foundation of engagement turned into regular feedback and knowledge sharing as the proposal was being assessed.

NEXT STEPS

For the regulatory proposal, investments were valued and assessed at a program level. While a strategy may make recommendations at a population level, it may be difficult and costly to translate this strategy into improved decision making at an individual asset level. Simultaneously, we are performing a review of individual capital projects to ensure they deliver value. We intend to build on this experience by staging the implementation of individual project optimisation, to ensure that we first establish a strong and representative asset risk management and value framework verified through accurate condition data and models.

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ARTICLE 2 – Value or Values of Effective Asset Management

Elizabeth Topolcsanyi, GHD
Jim Riddle, BSI

ABSTRACT

The long term value of effective asset management is a topic often misunderstood by top management. The long term objectives of realising value should be the primary objective but many organisations find resources are redirected before the project is fully implemented and benefits are achieved.

We'll showcase our findings on the value of a compliant asset management system that is aligned to the values and objectives of an asset owner or manager. We'll give insight into lessons learnt from projects that we have helped deliver and provide you the values that have been recognised from these different projects. We will provide guidance on how to sell

asset management to your top management so you can make your asset management journey business as usual rather than a short term initiative.

Keywords: asset management, ISO 55000, asset management system, assets, values, value, asset management journey

INTRODUCTION

The value of asset management is generally well recognised. There are many case studies and examples documented that provide quantifiable and qualitative values and benefits of asset management.

The question really is, what is the value or what are the values of a compliant asset management system?, whether this be to adopt a management system approach or to gain certification to ISO 55001.

In our experience, organisations that decide to “align” with the standard (as opposed to becoming certified) do so because the value of gaining certification and having a compliant asset management system have not been sufficiently well articulated or documented relative to the cost and effort.

Value is singular and can be defined as *the regard that something is held to deserve; the importance, worth, or usefulness of something*¹. The value realised could be the achievement of certification or compliance.

Values on the other hand, are principles or standards of behaviour, one’s judgement of what is important in life². An organisation or an individual adopts and/or promotes certain values to encourage particular behaviours or define standards of acceptable behaviour.

Value or values are likely to accrue over the long term. Depending on the size and complexity of the

organisation, it can take as long as 10 years to implement a compliant Asset Management System; after all, it can involve significant change management associated with embedding new processes, tools or ways of working. This often means values are not always realised immediately other than the “softer” value of culture. In our experience, the cultural changes that are associated with a certified system leads to the first level of improvement with more measurable improvements noted later in the certification lifecycle.

The objective of this paper is to provide some examples of value and values that have been realised by organisations from a compliant asset management system.

VALUE OR VALUES OF A COMPLIANT ASSET MANAGEMENT SYSTEM

The intention of ISO 55000 is to provide an asset management framework to enable an organisation to achieve sustainable organisational objectives through effective and efficient asset management, enabling the organisation to extract maximum value from its assets by balancing risk, cost and performance.

Organisations with compliant asset management systems clearly understand the fundamental principles of asset management:

- Value – assets exist to provide value to the organisation and its stakeholders

- Alignment – asset management translates the organisational objectives into technical and financial decisions, plans and activities
- Assurance – asset management provides assurance that assets will fulfil their required purpose, and
- Leadership – leadership and workplace culture are determinants of realisation of value.

As per ISO 55000:2014, an asset is an item, thing or entity that has potential or actual value to an organisation. The value will vary between different organisations and their stakeholders, and can be tangible, intangible, financial or non-financial. Asset management involves the balancing of costs, opportunities and risks against desired asset performance to achieve organisational objectives. The definition of a management system, according to this standard, is a set of interrelated or interacting elements of an organisation that establish policies, objectives, and processes to achieve those objectives.

The standard helps to ensure that the organisation’s asset management system contains all the key components, structure and accountability. The standard also puts importance on ensuring the right support (resources and competencies, responsibilities, and authorities) has been formally identified.

¹<http://en.oxforddictionaries.com/definition/value>

²<http://en.oxforddictionaries.com/definition/values>

Organisations with compliant asset management systems will have:

- clear understanding of how their assets (physical, non-physical, tangible or non-tangible) help to achieve the objectives of the organisation
- a clear alignment between the business objectives, operational and tactical activities and maintenance activities
- awareness campaigns in place, so that staff are understand how their roles affect asset management
- ownership and accountability at the top management level
- employees talking about value rather than cost, understand how assets produce value, and what the organisational values are
- decisions being made considering asset's whole of life rather than short term focus
- identification of their internal and external stakeholders, their requirements in respect to asset management and how this relates the organisational values.
- clear understanding of the risks and opportunities in regards to the assets they manage or own and of the asset management activities that are conducted
- an understanding of the potential consequences to business value that the

assets can contribute to, if not managed correctly (e.g. financial, safety, reputation etc.).

- mechanisms to capture and implement opportunities across the organisation through the mitigation of risks

In our experience, organisations seek to become certified to ISO 55001 in response to one or two key drivers:

- An internal business decision (e.g. to remain competitive or differentiate themselves in the market place) or
- To meet an external obligation (e.g. regulatory or contractual requirement)

Certification to ISO 55001 provides organisations with an independent endorsement of commitment to asset management that meets international standards. Potential and existing clients, partners and other stakeholders have the confidence that organisation's systems are effective in managing assets and the system has been audited regularly. The auditing process provides continual improvement. The purpose of the audit is assurance and it is concerned with assessing whether the organisation is actually doing what it has set out to do, namely apply the asset management system, whether this conforms to the standard, and whether the results are fulfilling the stated objectives.

Certification brings with it the experience of many other organisations and an

understanding of systems as opposed to processes. The understanding of the connection between the various clauses of the standard and how they interact with each other is the fundamental difference between a compliant and certified organisation. It is the misunderstanding of what a certified system is that leads to a senior management decision to only align to ISO 55001:2014 and often leads to them not realising the first step of certification which is cultural alignment with a system. This can prevent the longer-term gain of financial improvement.

Values from case studies

In the early days of a certified management system, the auditors will check compliance to the requirements of ISO 55001:2014. In the short term the gains from an effective certified system can be seen in the case studies below.

- WaterNSW – This organisation resulted from the combination of two separate entities into one. The two entities had different values, methods of assessing them, maintenance decisions and cultural references. The outcome after two years of certification was:
 - o Discipline in the areas of Management Review, Auditing and Continuous Improvement
 - o Engagement with senior management as well as staff at all levels of the organisation

- o Improved co-ordination of asset management activities across the business.
- Pacific Hydro – This organisation has been certified for a number of years in Quality Safety and Environment. The separately operating management systems did not allow the full realisation of the value of the assets. The introduction of the asset management system in 2017 allowed:
 - o Alignment of quality, safety and environmental systems into a consolidated investment approach based on asset lifecycle which led to an immediate improvement in the investment decisions
 - o Improved understanding of the values and therefore better alignment of contracted maintenance operator efforts which has led to better performing and engaged contractors.
- Evoenergy – previously known as ActewAGL. In November 2017, achieved certification to ISO 55001. The organisation, underwent a complete restructure to meet the requirements of ISO 55001 certification. It moved from delivering a time based service to delivering programs that were based on risk. In order

to do that, emphasis was placed on understanding the criticality and the condition of the assets. Instead of time based routine overhauls, the condition of critical assets is now assessed and intervention takes place where and when required. The organisation/s maintenance budget is now based on evidence of the condition of assets rather than previous budget with escalation factor. Gaining certification to ISO 55001 gave assurance that the assets of the organisation are being managed to the requirements of the owners and stakeholders.³

As a system progresses, improvements are an expected outcome for a certified system. The expectation is that the data gathered for compliance to the requirement of the system will be analysed so that it aligns with the values of the organisation. The challenge for many organisations is how to demonstrate the potential monetary benefits in order to get leadership to buy in to investment in asset management, to gain certification or to adopt an asset management system approach.

In our experience, organisations that have a compliant asset management system have realised these values in the longer term:

- Alpiq (First European Electricity

Company to receive ISO 55001 certification).⁴ Deployment of asset management tools on hydroelectric infrastructure managed by Alpiq has led to expenditure reduction over the next five years whilst simultaneously increasing the value produced from the assets. The ratio between the savings achieved and the costs incurred to acquire advanced tools are in excess of ten for one.

- Scottish Water
 - o 40% reduction in Opex Costs (2014)
 - o Increase in customer satisfaction of 20% (2002 to 2014)
- Sodexo –
 - o business efficiencies 10% average improvement,
 - o risk management 40% reduction of risk related costs,
 - o improved customer service and
 - o 100% compliance in regulatory services,
 - o Reduced failure rates of -20%.⁵
- Transport for London (TfL Surface Transport) – TfL already operated asset management practices, so

³<https://utilitymagazine.com.au/a-journey-into-iso-55001-certification>

⁴Alpiq Managing Hydropower_assets, Nicolas Rouge, Olivier Bernard

⁵Quantified Benefits from Asset Management – The Sodexo Journey, Peter Jay Principal Consultant, TWPL, Keith Hammer, Group VP, Engineering & Asset Management, Sodexo

⁶Implementation Guide for an ISO 55001 Asset Management System, A practical approach for the roads sector in Europe, CEDR (Conference of European Directors of Roads)

the baseline costs of the Asset Management System were not readily identifiable. However, by evaluating the additional costs of implementation and establishing appropriate performance metrics, TfL was able to demonstrate that the start-up costs were returned within one year.⁶

- Highways England’s cost of asset management operations were GBP 800M p.a. They estimated that implementation of an ISO 55001 Asset Management System would save GBP 80M p.a. and the start-up costs could be recovered in less than one year.
- Data and digital technology and tools are helping organisations predict the likelihood of given events, and are being used to inform capital process. An example of this, an infrastructure company took advantage of data-driven methods, when making decisions to help asset owners free up capital. This found 5 - 15% in portfolio savings when realised and redirected on other projects.

CONCLUSION

Values, as we have discussed, are the outputs from the change management associated with embedding new asset management processes, tools

or ways of working. In the short term, values are more likely to be collaboration, better engagement with senior management and staff at all levels of the organisation. This increased engagement leads to improved coordination of asset management activities across the business with longer term financial gains.

In summary, organisations with compliant asset management systems, clearly understand the systematic approach and how all of the various parts of a compliment system interact. This leads to the full realisation of value.

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ARTICLE 3 – Maximising Value from Property Assets

Jacqueline Blenkinship, Collectiveight Pty Ltd

ABSTRACT

Using asset intelligence as the basis for agile asset management planning. Using the data to differentiate assets from liabilities, define procurement strategies, maintenance programmes, develop and manage agile budgets. Every business that owns a portfolio of property assets is involved in asset management, the question is how actively they are managing those assets and are they maximising their value.

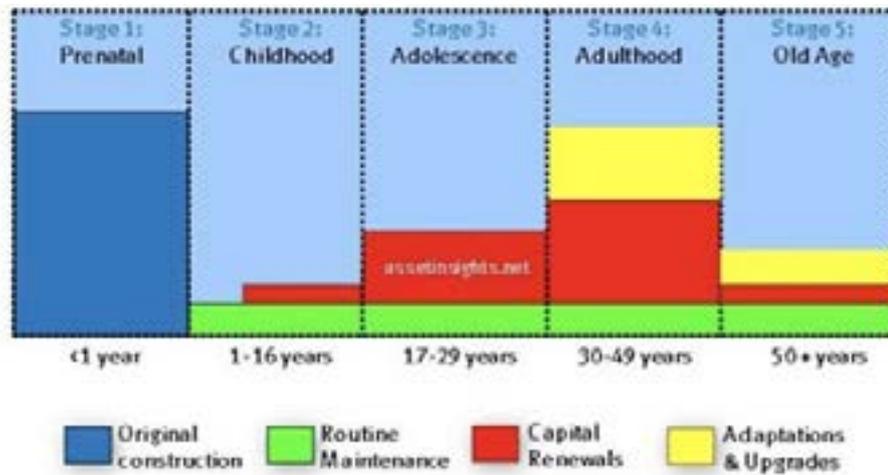
Keywords: asset, liability, condition, lifecycle, procurement, viability, finance, cashflow

INTRODUCTION

Often at times of low interest rates and low inflation organisations use the lower cost of capital to invest in new property assets. This can lead to organisations acquiring new assets in waves, that match the economic cycles (Reserve Bank of Australia 2019, 1-4).

This means that the repair and maintenance needs for the asset portfolio follow different investment profiles. Each asset in the portfolio will follow a similar path, but with differing start dates.

Figure 1 – Model to indicate the quantum of capital renewal costs at different stages in a facility life cycle



Source: Figure from *Asset Insights* (2019)

How can a business drive value from existing asset portfolios?
How can an organisation deliver more for less and ensure that the budget is being spent in the right place at the right time?

BUDGETING

Dr Penny Burns drafted an article in 2000 entitled "If 2% is the Answer, What's the Question?" (Burns 2000).

The paper looks at the various different methods that organisations use to set their maintenance budgets, how they define their overall maintenance liabilities and the differences in approach. Budgets purely based on overall percentages of gross replacement value do not provide detail on the allocation of funding to manage risk or technical funding priority and provides no feedback on the overall asset maintenance liability.

This approach could lead to over investment in some assets, uneconomic extended life, higher than necessary maintenance standards or failure to invest in key assets.

Many organisations still allocate financial resources as 'last year plus inflation', use a generic formula for example the Sherman Dergis formula or use a defined percentage of value or \$/M2; the process adopted is an insight into the asset management maturity of the organisation.

These methods all enable a financial budget to be set, but unfortunately none provides any cognisance of the fact that the portfolio is comprised of numerous assets at different stages of the asset lifecycle (see Figure 1) or provide direction on what the priority is for the available funding. This style of budgeting also limits the organisations ability to benchmark actual lifecycle replacement versus planned lifecycle assumptions.

LIFECYCLE COST MANAGEMENT

Property assets usually have a minimum overall design life of 50-60 years. Each component of the asset has a 'normal' design life, often defined by the material or product supplier with the caveat of correct installation, commissioning, general wear and tear. This normal design life should be the same as the depreciation life.

Capturing the lifecycle and matching that with a replacement cost enables forward projection of replacement for each component within each asset across a portfolio. This sets the benchmark against which actual performance can be assessed. Add to this data regarding servicing cost and frequency, along with repair costs and the total cost of maintenance of the asset can be established.

Over the last 20 years the two common drivers that trigger the capture, collection and analysis of lifecycle data linked to forward maintenance planning are finance and regulation, or both.

Many organisations start to capture the data so that they can substantiate borrowing to banks and show that their 30-year business plan does not breach loan covenants, whilst maintaining the asset in good condition.

Some banks already look at asset management systems as part of their loan management due diligence, as lending criteria tightens, banks no longer rely on simple percentage calculations to set maintenance budgets.

PROCUREMENT STRATEGIES

Understanding the quantum of work (number of components over a period of time) enables an asset owner to offer to market the most comprehensive programme of work.

Asset owners who do not hold lifecycle data to enable quantification of work are often found tendering one off piecemeal projects, rather than programmes of work/replacement.

Case Study 1

Using lifecycle data an asset owner calculated the need to replace 3,500 gas water heaters in their assets over a five-year period. Regulation stated that these gas water heaters also needed to be serviced every year. Existing practice would entail the procurement of replacement in areas/groups of assets at circa 50-100 units at a time, using the lifecycle data the organisation procured replacement of 3,500 over a 5-year term.

The overall cost of replacement reduced by 38% against previous historic costs – over \$3.3m savings against the maintenance plan for this one component.

The component was purchased directly from the manufacturer, was a higher specification than previously used (~\$0.75m added value) and included a 5-year parts warranty as part of the supply cost (estimated to save ~\$1.85m in parts across the 5-year warranty term). The saving from material procurement was circa \$2.1m, with an additional \$2.6m in added value.

The labour was procured as install only, a mind-shift for the sub-contract market at the time. The contractors (two were appointed) were able to secure a rolling 5-year program for a team of

installers, installing 7 systems per week, with no downtime, this secured a 35% saving in the cost of installation – saving \$1.2m in labour.

Over the 5-year term contractors KPI's were measured against each other to provide an element of competition, as a result defects were reduced to zero operational defects. As teams remained consistent, they progressed along a learning curve and became more efficient.

ASSET VIABILITY

Asset viability combines both income (or usage) and expenditure, alongside other risks and drivers that are often key market or stakeholder drivers.

The data across is from an organisation that owns just over 18,500 assets. The assets have a 30-year NPV of \$335m.

Just by working through a strategy for the 830 assets with a negative NPV (figure 2) the organisation can save \$3m, not taking into account any capital receipt from an asset sale.

The ability to drill down into the data that produces the NPV to see where the peaks and troughs in cashflow occur enables an asset management strategy to become more agile.

It enables an organisation to establish appropriate maintenance regimes and allocate asset groups to those regimes; short life maintenance (run to fail prior to disposal or demolition), continued planned investment (until the next review), or variations of the same; as well as identifying the timescale for the next review or option appraisal for the portfolio as a whole or a specific asset/asset groups.

The figure across shows the NPV for a single asset and the capex maintenance for the asset. The viability in the first ten years is questionable, years 10-20 are positive, however, post year 20 the property is not viable. The reality is that the property isn't viable across its lifespan, it has an overall negative NPV (total column), so unless there is a reason to retain the asset in the short term this asset should undergo an option appraisal process before further investment is made.

Again, the across only looks at cashflow. Whilst high maintenance costs can be an indicator of poor viability, so is lower than anticipated income; the

Figure 2 – Actual Net Present Values for a portfolio of 18,500 assets

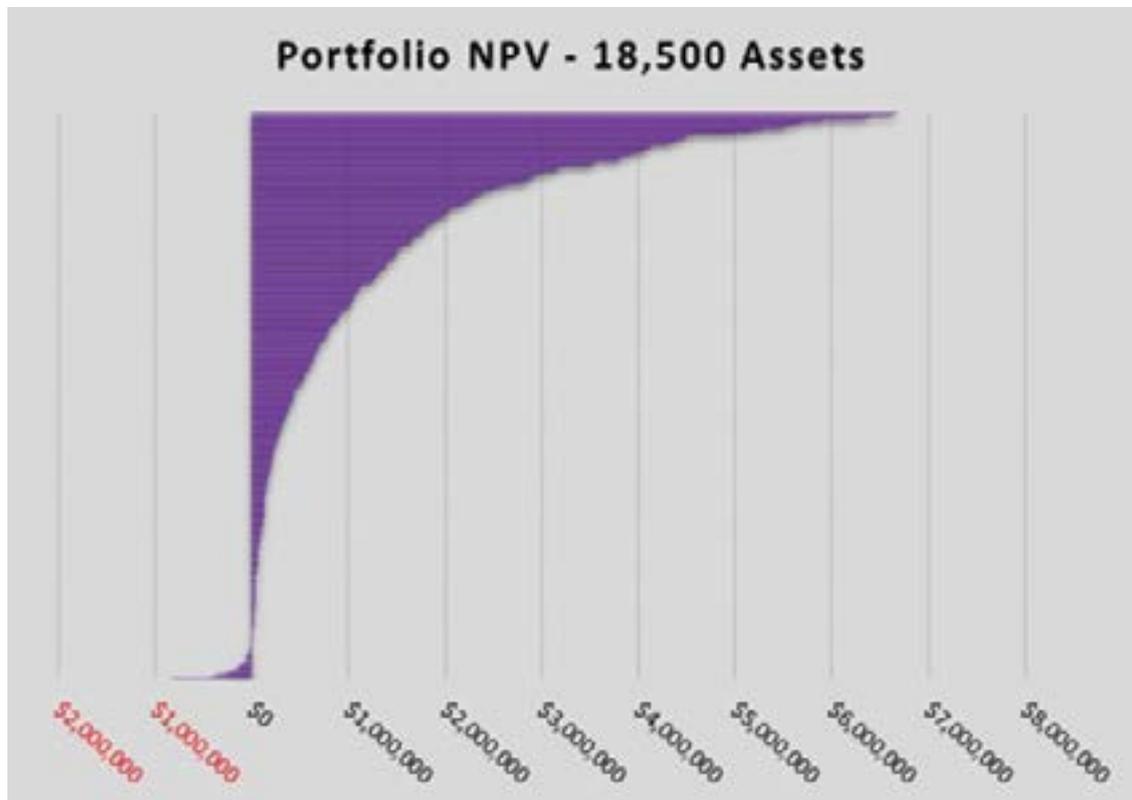


Figure 3 – Net Present Value and Capex for a single asset



above analysis does not identify all key risks and drivers that creates the NPV position.

Using relational data analysis, the data from the NPV calculation can be linked to external data sources to generate layers of analysis – the data from figures 2 and 3 are presented with other relational factors in figure 4 below – in this instance a weighted asset sustainability indicator using risk data regarding void periods, void frequency and demand for the asset type and location.

This analysis enables both the identification of assets (top right quartile) and liabilities (bottom left quartile), it also provides prioritisation for asset that require option analysis solutions, that will improve the overall financial position of the business.

Note: only properties in the top right quadrant should be

automatically contained within the procurement programmes detailed in the section on procurement strategies. Assets in other groups should only be added to programmed works following option analysis.

CONCLUSION

If you don't know the quantum of work that you need to deliver, that is the number of components, the cost of replacement and the timescales for replacement, then you are unlikely to be driving maximum value from your property assets through procurement.

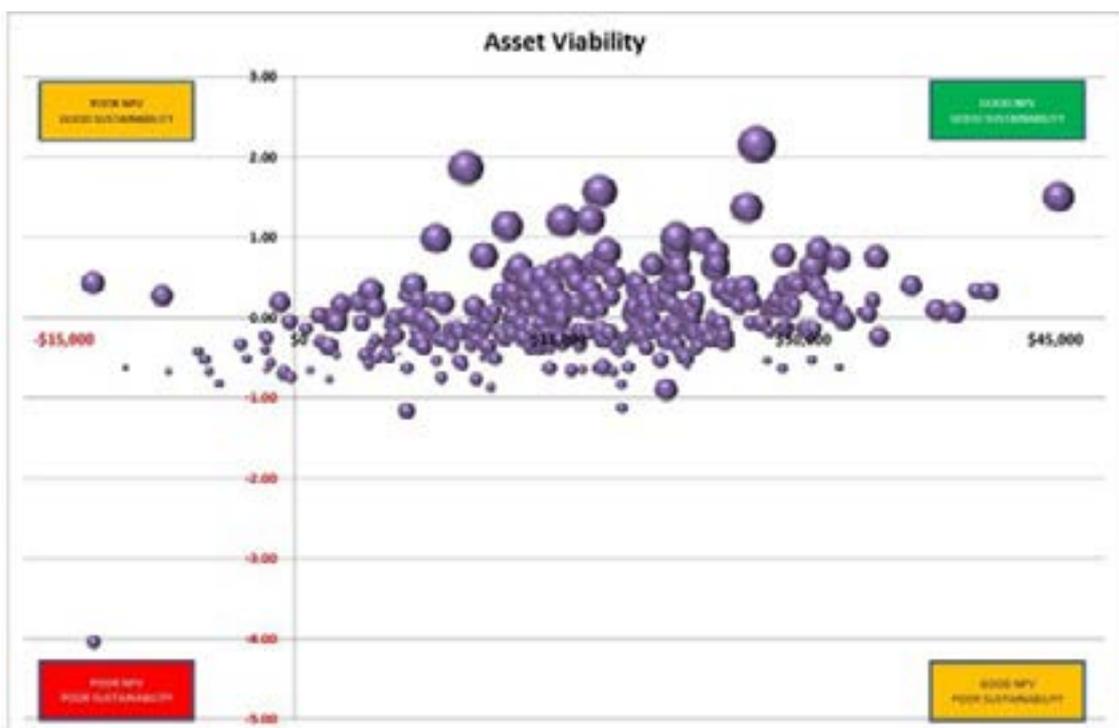
If you don't know your assets from your liabilities, then you may well be investing in liabilities rather than assets, and therefore not maximising value from your property assets.

Collect data regarding your assets, apply lifecycle costing to assets and components and use the data wisely, it could save you millions.

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Figure 4 – Net Present Value mapped against key business risks



A hand in a white shirt is drawing a red arrow that curves upwards and to the right. Below it are two horizontal blue arrows pointing to the right. The background is a blurred office setting.

ARTICLE 4 – Effective Asset Management Systems for Intangible Assets - Maximising Value of IP using Asset Management Concepts

Rachel Scott, Capability Partners

ABSTRACT

Designing and implementing effective asset management systems is a well-worn path for physical assets. Intangible assets, although of critical importance to many businesses, have

traditionally been excluded from asset management techniques. Intangible assets are identified as non-monetary assets without physical substance and can include goodwill, intellectual property, trademarks and licenses. Their value is typically

not realised until the business is sold. Intangible assets often account for more than 50% of business value, much higher in many industries, yet they are infrequently monitored and managed.

This paper aims to explore the additional benefit which can be provided to businesses through the surveillance of stakeholder expectations, development of asset management objectives, application of risk management and decision-making criteria, control of processes, competencies and roles, and performance monitoring and improvement when considering intangible assets.

To explore the challenges and benefits of intangible asset management, a case study on education materials is leveraged. The case study follows the progression from no active management to the implementation of all asset management system elements compliant with ISO 55001, with the impact measured. Quantifiable asset management objectives are developed and monitored, with achievement correlated with profit and loss. The effect of nurturing intangible assets on holistic business value is assessed, with the resource investment for effective management quantified.

Using quantifiable business outputs, this presentation will discuss the applicability of all asset management system elements to intangible assets and explores the advantages and limitations of ISO 55001.

Keywords: Intangible Assets, Intangible Asset Management System, Effective AMS, AM Objectives, Business Value

INTRODUCTION

This paper aims to explore the additional benefit which can be provided to businesses through the surveillance of stakeholder expectations, development of asset management objectives, application of risk management and decision-making criteria, control of processes, competencies and roles, and performance monitoring and improvement when considering intangible assets.

BACKGROUND

Designing and implementing effective asset management systems is a well-worn path for physical assets. Intangible assets, although of critical importance to many businesses, have traditionally been excluded from asset management techniques. Intangible assets are identified as non-monetary assets without physical substance and can include goodwill, intellectual property, trademarks and licenses. Their value is typically not realised until the business is sold.

While the contribution of intangible assets to business value has historically been recognised, management techniques have been lacking (Barth, et al., 2000). The past decade has seen collective research on managing intangible assets however the focus has been on the identification, logging and valuation of the assets, as opposed to establishing structures in order to grow the value (Nichita, 2019). In the knowledge economy, where the contribution of intangible assets to business value is increasing, the emphasis

is required to shift to improved management of the assets to maximise value.

ISO55000 states that an asset can be tangible or intangible, however the repeated success of the application of ISO55001 requirements is typically demonstrated against physical assets. To explore the challenges and benefits of intangible asset management, a case study on knowledge assets is leveraged, with a primary focus on education materials. The case study follows the progression from no active management to the implementation of all asset management system elements compliant with ISO 55001, with the impact measured.

APPROACH

A top-down approach has been applied to the development of an intangible asset management system for knowledge assets. While the educational materials have been utilised for years, no formal management system has been in place. A three-step approach has been taken to apply asset management techniques to the assets; identification and selection of the intangible assets, valuation of the assets, and development and implementation of an intangible asset management system.

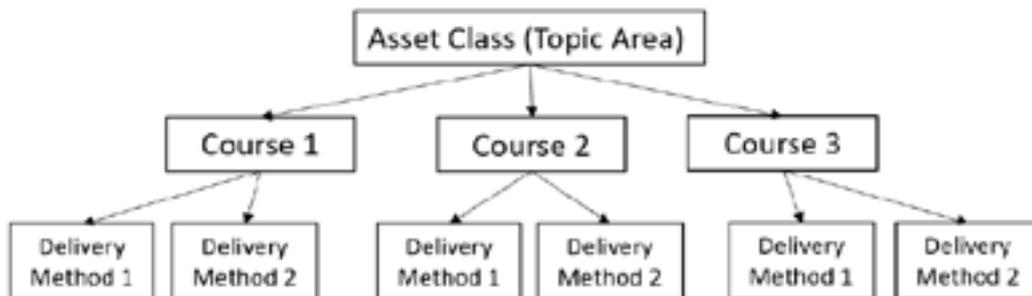
Step 1 - Identification of Assets

The first step in developing an intangible asset management system is the identification of the assets, their boundaries and their interrelationships. Intangible assets should be identifiable, legally owned, have trace-able

development, can be protected, have proof of existence, and have similar or comparable assets found elsewhere in the marketplace (Anson, 2007).

The Asset Class, or Topic Area, was selected as a centralised grouping of knowledge assets due to the distinct products being pulled from the centralised location. The product breakdown structure, shown in Figure 1, provides the method for establishing the boundaries of each of the knowledge assets. The tangible assets and resources required to support each delivery method varies.

Figure 1 – IP Product Breakdown Structure



Step 2 - Select Valuation Methodology

The methodology used to calculate the value of the intangible assets is the “Excess Earnings” method

$$FV = PV(r) \sum_{t=0}^i (Revenue - Expenses - CACs - Taxes) + PV(r)(Tax Benefit) \quad \text{Equation 1}$$

Revenue = Applicable Revenue Forecast

Expenses = Applicable Expenses

CACs = Contributory Asset Charges

Taxes = Expected Future Tax Rates

t = Expected Life

PV(r) = Discount Rate

PV(r)(Tax Benefit) = Tax Amortisation Benefit

(Australian Accounting Standards Board, 2015). This method calculates the fair value of the assets using Equation 1.

The Excess Earnings method was chosen to allow a clear comparison of the value of the assets at a granular level. Valuation occurred at the delivery method level, with the sum of the delivery method values contributing to the value at the Course level. Knowledge areas were valued including the contribution of the Course values, as well as the potential of new Courses being developed out of the information and expertise gathered.

Application of the Excess Earnings method demonstrated that the intangible assets were not being managed or utilised effectively.

Step 3 - Develop and Implement a Strategic Asset Management Plan

A Strategic Asset Management Plan was developed, specific to intangible assets, to meet the requirements of ISO55001 with the following subclauses considered.

Stakeholders

Consultation with internal and external stakeholders was undertaken to gather the expectations. A demand assessment strategy was developed, including market research, which informed the customer need. Competitor offerings were reviewed to determine gaps in the market, both in content, delivery mode and qualification structure. This activity provided insights with regard to customer demand which were previously unknown.

Organisational Objectives

The previously determined organisational objectives were reviewed for applicability to the intangible assets. Through the lens of intangible assets, the key objectives focused on reputation, staff satisfaction and financial objectives were selected from a broader objective selection, as shown in Table 1. The initial implementation has a 12-month horizon to allow determination of the baseline before increasing the horizon.

Table 1 – Organisational Objectives (Extract)

Focus Area	Objective
Reputation	Improved Reputation
Staff Satisfaction	Improved Staff Satisfaction Reduction in Staff Turnover
Financial	Profit Increase Return on Investment Return on Net Assets

Asset Management Objectives

Quantitative measures relevant to the assets were provided for each organisational objective. Percentage allocation techniques, including block diagrams where relevant, were utilised to ensure alignment and clear articulation of the objectives for all product offerings. An example of the profit allocation is provided in Table 2.

Table 2 – Profit Objective Allocation (Extract)

Asset Class	%	Courses (Including Reference Material)	%	Delivery Method	%
Analysis Techniques	20%	Reliability	40%	Online Self-Paced	10
				Online Facilitated, Public	35
				On-Site Facilitated, Public	5
				Online Facilitated, Private	15
				On-Site Facilitated, Private	35
Maintenance Optimisation	60%			Online Self-Paced	10
				Online Facilitated, Public	35
				On-Site Facilitated, Public	5
				Online Facilitated, Private	15
				On-Site Facilitated, Private	35

Decision Making Criteria and Risk Management

Typical decisions required to support physical assets were used as the foundation to identify the key asset management decision making criteria for intangible assets. An extract of the key decisions considered in the implementation of the asset management system are given at Table 3. While these decisions are focused on the management of intangible assets, the funding and resourcing strategy and, therefore, prioritisation of funding and human resources to the development, improvement and maintenance of intangible assets, prioritisation is required to occur at the organisational level.

Table 3 – Intangible Asset Decisions (Extract)

Decision Area	Decision Point
Maintenance	When to undertake review of delivery method, course or knowledge area Level of effort applied to review and update
Repair/Replace	When to fix issues When to review an entire course or overhaul a knowledge area Level of effort applied
Asset Selection	When to create a new knowledge area or course When to deploy a new delivery method Level of effort applied
Funding and Resourcing Strategy	How to prioritise funding and human resources

Organisational Roles and Competency Management

A RACI Chart was developed to allocate Responsibilities and Accountabilities for the development of the SAMP, the review and maintenance of the Asset Management System, and to make each of the decisions, as discussed in Section 3.3.4. The required skills and knowledge were articulated in order to develop the intangible assets, maintain the intangible assets, deliver the courses and make the asset management decisions. Undertaking this process identified some minor capability gaps for management.

Process Management

Prior to the development and implementation of the asset management system, no processes with regard to the intangible assets existed. Processes were developed in order to achieve the asset management objectives and support the decision requirements. An extract of the processes is shown in Table 4.

Table 4 – Asset Management Processes (Extract)

Objective/Decision	Process
Funding Resource Prioritisation	Process to select new intangible assets to develop/purchase
Asset Creation and Support	Process to select supporting tangible assets Process to develop new intangible assets Process to review and replace intangible assets Process to tailor intangible assets
Financial Achievement	Process to allocate assets back to intangible assets Process to assess the financial performance of intangible assets
Customer Improvement	Process to review the effectiveness of the Asset Management System

In order to understand the current baseline of performance, historical data was required to be collected and analysed. This activity identified a number of deficiencies in the financial data collection and management with regard to demonstration of contribution to intangible assets. Historical data was allocated to the various products with great difficulty, prompting a change in recording and reporting practices.

Data, Performance Monitoring and Improvement

A series of Key Performance Indicators (KPIs), reports and meetings were developed to provide assurance that the asset management objectives will be met. The data requirements were aligned with the KPIs and process requirements, as shown in Table 5 (extract).

Table 5 – KPIs and Data Requirements (Extract)

Performance Area	KPI	Data Requirements
Asset Creation and Support	Efficiency of course development	Time taken to develop course from existing knowledge area
	Efficiency of course review and improvement	Time taken to develop course from new/emerging knowledge area Time taken to review, update, improve, tailor course
	Efficiency of tailoring	Time taken to review, update, establish knowledge area Tangible assets required to support development
Financial Achievement	Profit (\$)	Cost per unit of supporting resources
	ROI (%)	Cost of tangible assets Cost of overheads Development, review, delivery costs
Reputation	Customer Satisfaction	Customer satisfaction surveys
	Returning Customers (%)	Customer recommendations
	Customer Numbers	Completion of courses
Staff Satisfaction	Staff Turnover (%)	Gapped positions length
		Staff turnover Staff satisfaction surveys
Funding Resource Prioritisation		Search engine/website activity Product inquires and product uptake

BENEFITS AND ADDED VALUE

The benefits of applying asset management techniques to intangible assets can be defined both quantitatively and qualitatively. A key outcome is increased awareness across the business of the use and performance of the knowledge assets. As a direct result of this exercise, the following benefits were realised:

- Establishment of processes which support standardisation of business activities – this created efficiencies, reduced effort and improved the ability to compare activities.
- Establishment of KPIs which has supported measurement and tracking of success, as well as encouraged good practice behaviours and efficiencies. Specifically, the inclusion of the efficiency KPI with regard to course tailoring has resulted in the restructuring of course material to identify tailoring requirements and support easy update, as well as resulted in a standardised process for eliciting customer information to enable effective tailoring.
- Course offerings are being expanded, both in technical knowledge areas and the delivery method.
- Price points for courses have been modified increasing uptake and profitability.
- The collection, recording and accounting of financial information has been modified.
- Capability gaps have been identified with a plan developed to close them.
- Reduction of physical asset solutions.

Quantitatively, these asset management structures and improvements have not been in place for sufficient time to see a significant change in the “Excess Earnings” value of the intangible assets, however initial analysis is promising.

CHALLENGES AND SHORTFALLS

Although the benefits of applying asset management techniques to intangible assets have been significant, this activity did identify a number of

challenges which require management. Boundaries between intangible and tangible assets, how they interact and how they contribute to the overall objectives need to be well defined. Additionally, management of intangible assets cannot occur independent to the management of physical assets and other organisational activities. While the narrow focus can be considerably beneficial, the necessary priority among other organisational activities is required to be given to the management of intangible assets in order to achieve the value.

CONCLUSION

Through the development of a Strategic Asset Management Plan and asset management system, this case study found significant benefits in applying asset management concepts to intangible assets. While some minor challenges were identified with regard to the interaction of intangible and tangible assets, this no way inhibited the ability to implement an intangible asset management system and realise the associated benefits.

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AMPEAK23 is a world leading asset management conference and features a range of exhibits, case studies and technical content from all industries

AMPEAK23 - enabling leaders in asset management to achieve excellence in the management of assets

AMPEAK23 is the meeting place for asset managers and a place to engage in lively discussion on emerging topics of interest in asset management, share new ideas and knowledge, and find practical solutions to take and use in your workplace.

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- **Asset Management Planning:** Maintenance strategies; Capital investment decision making; Maintenance and operations decision making; Contingency planning; Risk assessment and management
- **Asset Lifecycle Delivery:** Asset creation; Tailoring Systems engineering; Maintenance delivery; Maintenance, reliability, criticality of aged assets; Reliability engineering asset operations; Fault and incident response; Asset decommissioning and disposal; Procurement and supply chain management; Shutdown and outage management; Resource management
- **Asset Information and the Digital World:** Cyber security; Next generation AM information systems; Advances in digital engineering; Move to smart assets; Impact of connected environments; Using digital to drive AM decision making; Asset Information strategy, Systems, Standards; Data and information management; BIM and Digital twin challenges for AM; AI role in AM
- **Asset Management People and Leadership:** Asset management leadership; Sharing beliefs, values and assumptions; Change management challenges; Embedding AM processes and practices; Collaborating to address the Skills crisis; Empowering the future generation; Building an asset management competency framework ; Resourcing a resilient workforce
- **Governance for Asset Management:** Building, Implementing, Maintaining and Monitoring an effective Asset Management System; Building the right objectives;
- **Asset management policy;** Strategic planning; Management review and audit, compliance and assurance; Technical standards and legislation; Integrated Management Systems into enterprise management system; Aligning with ISO55001:2014
- **Future proofing Asset Management:** Integrating climate risk assessments in to AM; Building resilience into asset management systems; Frameworks for resilient asset decision making; Re-imaging finance mechanisms for resilience; AM and circular economy; Nature based solutions; Transitioning to net zero; Decarbonisation technologies and associated stranded assets; Asset management in a Covid world; Use of technology in AM

SYDNEY LOCATION

This year's conference is being held in Sydney with welcome reception at the fabulous Madame Tussauds.

You won't want to miss our Gala Awards night. The 2023 dinner and awards ceremony will be held in the magnificent Ballroom at Doltone House, Hyde Park.

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Nominations for asset management excellence are available in a range of categories. Awards will be presented at the gala dinner.

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STAR PROFILE – Rajat Jain CAAM

1. Why Asset Management?

The reason WHY asset management is important, in my opinion, varies greatly based on the company, the industry, and the individual. The most essential thing, I believe, is that businesses are realizing that with strategic asset management, they can unlock the value potential of their existing assets.

2. How long have you been working in the asset management sector?

In September of this year, it will be 15 years.

3. What is your speciality?

As a functional consultant in the asset management industry, I have worked with more than 50 clients on several implementation projects across a range of industries, including mining, oil and gas, and chemical and industrial products. Creating best practice guidelines for maintenance strategy and process workflow is one of my main areas of focus. Create an all-encompassing maintenance business process. program optimization for maintenance. Analyse ERP data to find key pain areas in terms of recurring failure modes, downtime, and production loss. Give training and conduct a workshop with the asset's stakeholders. By analysing the systems, units, and frequencies, develop a preventive maintenance optimization strategy. Find opportunities to enhance asset performance.

4. What's the best career advice you've ever received and who gave it to you?

I've had the great fortune to work with some of the top professionals during my career. I was given the best career advice from one of my bosses, you should devote 80% of your time on planning & strategy development. Once the strategy had been created with strong thinking and data backing, it would be executed much more quickly. Similar to this, it's crucial to know what we want to accomplish in asset management. Whether it's OEE, reliability, production excellence, or asset performance, we must plan accordingly and choose the appropriate tools and resources to carry it out.



*Rajat Jain CAAM,
Sr. Account Representative, KBR Industries*

5. What makes a great asset manager?

Instead of searching for the best solution, a good asset manager constantly tries to select the most appropriate one, supported by big data and analytics. Additionally, a competent manager needs to be aware of the limitations of existing systems and procedures.

6. What is the most exciting trend that you've noticed in asset management today?

It is the adoption of other technologies like cloud and AI. We have reached a point where we are unable to function without connected assets. Clive Humby, a British mathematician, coined the term "data is the new oil" in 2006. This analogy is accurate because data now drives entire industries and has great value, but if it isn't purified, it is almost useless.

Also, most of the IT firms are strategically placing their products and packaging it with services. So the market is huge as the benefits is visible.

7. What is the biggest challenge facing up-and-coming asset managers today?

Change is never easy to process. Additionally, if things are changing so quickly, it would be quite difficult for an asset manager to keep himself always informed. What is brand-new and "just arrived" today will swiftly become "no longer needed."

Today's asset managers also must show that every initiative and choice they make results in value being realized. A single model that works in all situations cannot be used to balance cost, risk, and benefit.

8. What advice would you give to an up-and-coming asset manager today?

It's a choice a person has to make. Whether you want to become a specialist in one or you want to learn something about everything. Data is the oil but use it wisely.

9. What is your proudest career achievement?

When some of my co-workers/juniors approach me and express how much they value the lessons they have learned while working with me and how they are progressing in their jobs, I feel incredibly proud of them.

10. What's next for you?

A new challenge :-P

11. When you're not busy at work, what do you enjoy doing to unwind/relax/explore?

I love to travel and spent time with my family. I also believe that we all have a responsibility to the community, so I'll try to volunteer and give some of my time for it.

Rajat recently achieved his Certified Associate of Asset Management (CAAM). To find out more about our internationally recognised certification scheme, visit www.amcouncil.com.au/certification

STAR PROFILE – Primesh Jassa CPAM

1. Why Asset Management?

I decided to pursue a career in asset management owing to my fervour for ensuring the preservation of our infrastructure to a high standard with the goal of optimizing asset lifespan and securing them for future generations. As an asset manager, my prime objective is to mitigate the risk of asset failure through proactive maintenance and strategic decisions. By leveraging asset performance data, I am actively involved in developing maintenance strategies that not only minimize risk but also enhance the return on investment for asset owners. I firmly believe that taking a long-term perspective and giving due consideration to sustainability aspects are crucial for asset management to play a pivotal role in ensuring sustained functionality and performance of our infrastructure, while simultaneously providing favourable outcomes for both investors and end-users.

2. How long have you been working in the asset management sector?

Education: Completed a Masters in Infrastructure Management and Maintenance in 2017.

Experience: 7 years of industry experience, starting with condition assessment of the Koeberg Nuclear Power plant in South Africa. Currently working with Ventia in Sydney, responsible for asset management of Motorways and Tunnels for the client Transurban.

3. What is your speciality?

Through my experience profile at Ventia, I have honed a specialized expertise in the operations and maintenance of Motorways and Tunnels infrastructure. My core competency centres on developing and implementing innovative maintenance and asset management strategies that prioritize optimizing the lifespan and performance of tunnel infrastructure; whilst also ensuring risk reduction, field staff safety, efficiency, and sustainability.



*Primesh Jassa CPAM,
Asset Manager Motorways & Tunnels, Transurban*

4. What's the best career advice you've ever received and who gave it to you?

Education is an essential tool that can unlock innumerable opportunities and broaden one's horizons. It is a lifelong asset that endows individuals with knowledge and skills that cannot be taken away. These insights were imparted to me by my grandfather during my initial job search after completing my university education.

5. What makes a great asset manager?

In my perspective, effective management entails leading by example and possessing a thorough comprehension of every responsibility and activity that the team oversees. Through my experience, I have found that team members hold immense appreciation for a manager who actively works “in the trench” alongside them and demonstrates a deep understanding of their daily operations. This approach not only garners respect and support from team members but also fosters a culture of collaboration and continuous improvement.

6. What is the biggest challenge facing up-and-coming asset managers today?

Asset managers face significant challenges in managing aging infrastructure in the wake of climate change and population growth. The continuous use of aging infrastructure increases the likelihood of failures, which can have significant negative impacts on people's lives and the economy. The costs of upgrading or replacing such infrastructure can also be prohibitive. Furthermore, climate change exacerbates these challenges by creating more severe weather events that put further stress on aging infrastructure. The rise in population also puts pressure on infrastructure, as it is required to accommodate the growing demands for transportation, energy, water, and other essential services. Therefore, asset managers must develop innovative strategies to maintain and optimize aging infrastructure while balancing costs, risks, and sustainability. This requires an interdisciplinary approach that includes engineering, finance, data analysis, and stakeholder engagement to manage the life cycle of assets effectively.

7. What advice would you give to an up-and-coming asset manager today?

Collaboration among asset management professionals is crucial in ensuring that industry best practices and novel strategies are shared and implemented effectively. With the rapid pace of technological advancements, it is essential for asset

management professionals to stay up-to-date with the latest developments and trends in the field. By sharing ideas and knowledge, asset managers can gain valuable insights into how different assets are managed and identify opportunities to adopt new technologies that can enhance the efficiency, safety, and sustainability of their own assets. Collaborating across projects also fosters a culture of innovation and continuous improvement, which is essential in addressing the complex challenges facing asset managers.

8. What's next for you?

With the recent acquisition of the Certified Professional in Asset Management (CPAM) and Chartered Professional Engineer (CPEng) certifications from Engineers Australia, I am better equipped to recommend, drive, and implement innovative solutions in asset management with a high degree of credibility for my organization. I am looking forward to further develop my profile by working in various asset management projects. Managing Australia's aging infrastructure in a sustainable way for future generations is the driving force behind my work. I thrive on challenging projects and consistently deliver successful outcomes, making me a valuable asset to any organization seeking to optimize their asset management practices. I am excited to push the limits of what can be achieved in infrastructure management and drive positive change in the industry.

Primesh recently achieved his Certified Practitioner of Asset Management (CPAM). To find out more about our internationally recognised certification scheme, visit www.amcouncil.com.au/certification

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The Asset Management Council Awards celebrate the significant contribution individuals and organisations are making to the advancement of asset management in Australia, and internationally.

The Awards recognise organisations who are making a start and are on the journey of continuous asset management improvement.

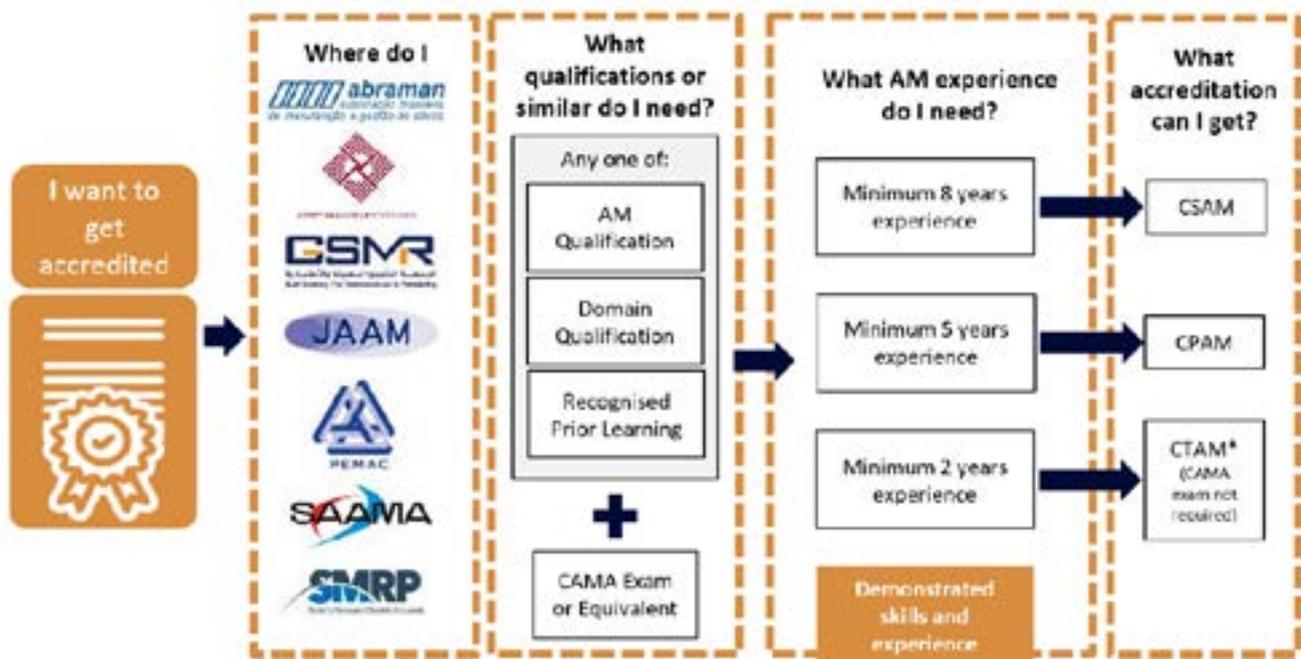
The Awards also recognise individual achievement in asset management leadership and student innovation in the field of asset management.

NOMINATIONS CLOSE FRIDAY 3rd MARCH 2023

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Global Certification Scheme Application Requirements



* CTAM "AM Certificate" requirements under development

CHAPTER NEWS

CANBERRA

On 7 February, the Canberra Chapter hosted its first event of the year where delegates gathered to learn about how updates to the Security of Critical Infrastructure Act have brought more infrastructure systems within the purview of the legislation. In his presentation, AMCouncil Canberra Chapter Chair Wayne Francisco talked to how the protection of Critical Infrastructure can be aligned within an Asset Management Program with reference to the GFMAM Asset Management Landscape Subjects.

We are pleased to announce the Canberra Chapter Committee for 2023 as follows:

- Wayne Francisco – Chapter Chair & Secretary
- Andrew Grant – Chapter Vice-Chair
- Ali Behnood
- David Wilkinson
- Richard Windsor



MELBOURNE

The Melbourne Chapter host its first event of the year on 15 March where delegates gathered to learn about RAMS (reliability, availability, Maintainability and Safety). In his presentation, Dr Allen Tam presented how RAMS engineering skills contribute to the life-cycle performance of a product/asset/ services and how various tools can be applied.



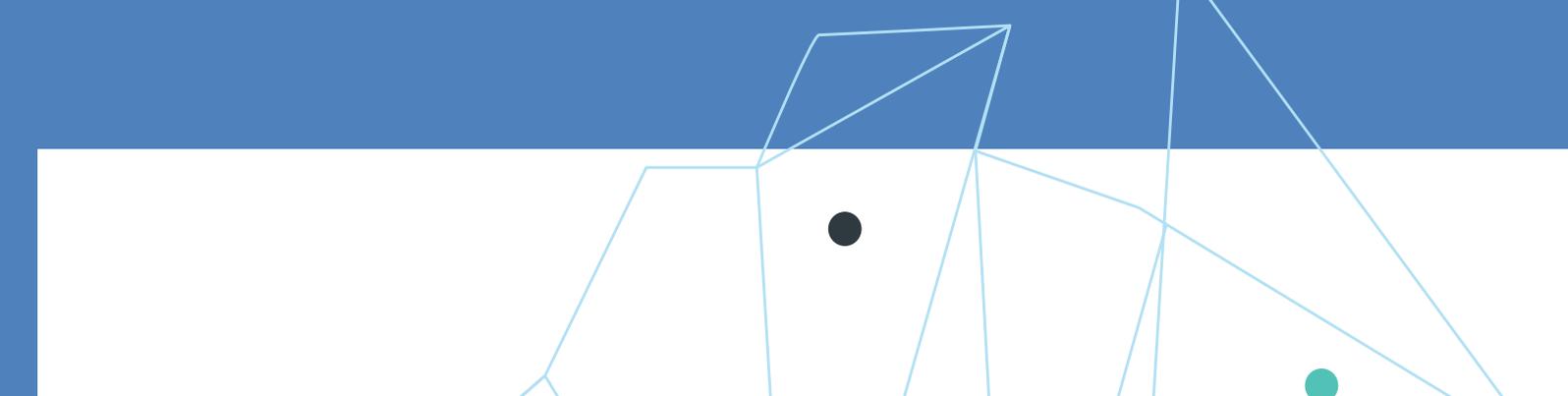
CHAPTER NEWS

PERTH

On 16 March the Perth Chapter host a technical event where selected panellists from Rio Tinto, KPMG and AMCL evaluated some of the intricacies associated with SAMPs in Dynamic Environments.. The discussion invoked further thought and deep evaluation of how Asset Management organisations can apply different

approaches to suit business models, meet ISO standards, and have SAMPs that are Useful, Useable & Used in such a rapidly changing world!





SYDNEY

The Sydney Chapter of the Asset Management Council held its online AGM yesterday evening. We are delighted to announce the 2023 AMCouncil Sydney Chapter committee line up is:

- Myles Gatherer (Chair)
- David Spiteri (Vice-Chair)
- Stephen Poropat (Secretary)
- Gajanan Bochare
- Dylan Buckley
- Shane Day
- Timothy Dowsett
- Tammy Falconer
- Katrina Farah
- Lucy Nitschinsk
- Paul O'Docherty
- Ram Prakasan
- Harpreet Singh

The committee has three new members: Gajanan Bochare, Dylan Buckley and Harpreet Singh. Contribution from the outgoing Vice-Chair Samiha Najem is highly commended. Samiha's hard work, dedication and committed efforts within the Sydney Chapter is acknowledged and many thanks go out to her.

Congratulations to Myles Gatherer who is stepping into role as Chair. Thank you to outgoing chair, Dave Spiteri, for all you have given to the chapter as chair over the past two years, we are delighted you are staying on in the capacity of vice-chair.

Following the AGM, members were treated to an online panel discussion to discuss future challenges of asset management, led by David Spiteri.

5 STEPS TO CERTIFICATION



ASSET MANAGEMENT COUNCIL

Consider your potential.

Becoming qualified in asset management offers numerous and extensive benefits along your professional journey. It provides you with a national and internationally recognized qualification and demonstrates your commitment to the asset management field.

PREPARE YOURSELF

Read through the Applicants Guide to Certification and competency standards listings. Take a self-assessment to work out which level is most suitable for you to apply for.

1

APPLY ONLINE

Choose the competency sets that you wish to include (tip: no need to choose them all, take note of the minimum you need), click apply and make the payment.

2

WRITE EVIDENCE

Write your detailed evidence in each set to provide evidence, using examples from your career to date, of how you are competent in each standard and provide referees to affirm your claims.

3

WAIT TO HEAR

Your referees will be contacted, and your application will be reviewed by two assessors. You will be updated as your application progresses. Please allow 8 - 12 weeks for this process.

4

BECOME CERTIFIED

The Assessment Team will make a decision on Certification and you will be advised accordingly, and all being well, issued with a certificate of Competency.

5

Visit www.amcouncil.com.au/certification to begin your certification journey now.

A strong asset management culture...

- Can improve results beyond profitability
- Creates the right conditions to improve management practices
- Provides a positive co-operative work environment
- Improves productivity and reduces operating costs
- Helps protect brand and image
- Leverages existing strengths in the organisation
- Allows for the ability to quickly adapt to changes in external conditions
- Provides the environment for innovation to flourish
- Gives a greater level of confidence in the achievement of outcomes
- Creates the right conditions for a sustainable culture for success



JAN 2023

FROM THE CHAIR

Toby Horstead
Chair - Asset Management Council



Building Capacity for Resilience

AM IN GOVERNMENT SYMPOSIUM 2022

We held the annual Asset Management in Government Symposium in Sydney recently, where the theme was 'Today's decisions for tomorrow's outcomes'.

We opened by asking "How can we change our thinking and approach to assure public assets will deliver the service and community benefit for following generations?"

My appeal is that we must think beyond the build of today to the sustainability and resilience of assets for the future.



"We must think beyond the build of today to the sustainability and resilience of assets for the future."

My perspective is that as an industry we would do well to focus on assurance (giving and receiving), and more importantly capability building. Public asset owners should be investing in their organisational capability, and industry should be focused on providing enduring uplift in knowledge and management system improvement, not just providing reports.

Jim Betts, Secretary for the federal Department of Infrastructure, Transport, Regional Development, Communications and the Arts, recently highlighted the need for the federal government to be an informed investor. He talked about investing in resilience, decarbonisation and capability building.



During that presentation Jim identified the value of long term asset management and noted that for asset managers 'your time has come'. Our industry has such an important role and opportunity to help define and understand the future, the need for assets, and the outcomes required. Despite being in drought not so long ago should we have predicted the rains to come on the cycle of La Nina and raised the dam walls, should we have moved communities already? Asset Management approaches, knowing the assets and understanding the outcomes, are so important to making our future more sustainable and resilient.

*'Asset
Managers,
your time has
come'*

MINISTER JIM BETTS



FEB 2023

FROM THE CHAIR

Toby Horstead
Chair - Asset Management Council



Collaboration Through Asset Management

AMPEAK 2023

The theme for AMPeak 2023 in April in Sydney is "Collaboration through Asset Management".

This collaboration was evident at our most recent Exchange weekend where our Chapter and Special Interest Group leaders came to together with the Board to consider the local and global landscape and to plan the forward technical program.



*"I am enthused by
the growing
diversity of
approach and
thinking within
the Asset
Management
Community"*

I am enthused by the growing diversity of approach and thinking within the asset management community. I know we have active participation from change managers, economists and financiers, information specialists and also those with psychological training.

Perhaps this is part of the doing things differently and making decisions today with the future outcomes in mind.



This is aligned with no longer being constrained by 'physical' in our asset thinking, and we should further stretch our profession to intangibles and community value, and perhaps management systems more generally.

AMPEAK23 is the meeting place for asset managers and a place to engage in lively discussion on emerging topics of interest in asset management, share new ideas and knowledge, and find practical solutions to take and use in your workplace.

Come and hear from asset management experts covering lifecycle issues for all assets, take part in interactive sessions, chat to exhibitors and network with professionals across all sectors and industries.

Register at ampeakconference.com.au

*the No.1
reason to come
to AMpeak is
because it's
great fun!*

TOBY HORSTEAD



MAR 2023

FROM THE CHAIR

Toby Horstead
Chair - Asset Management Council



Today's Decisions for Tomorrow's Outcomes

ENGINEERS AUSTRALIA RELATIONSHIP

Our thanks to Romilly Madew, CEO of Engineers Australia for strengthening our relationship and addressing our Asset Management in Government Symposium late last year.

Engineers Australia is very important to our foundations; and maintenance engineering is in the DNA of the Asset Management Council.



"Maintenance Engineering is the DNA of the Asset Management Council."

Our role as a Technical Society of Engineers Australia is important, and as a professional body we provide that holistic management system / outcome focused voice for the Asset Management Area of Practice.

More broadly we represent and provide support on engineering asset management across all Engineering Communities.



This is aligned with no longer being constrained by 'physical' in our asset thinking, and we should further stretch our profession to intangibles and community value, and perhaps management systems more generally.

In a world of constant change, and the known and the unknown challenges, organisations will benefit from established, communicated, integrated and operationalised management systems. This will position organisations to be agile in their response to the challenges and disruptions of the day, whether that be pandemics, economics, climate or political impacts.

We look forward to the ongoing strengthening of our relationship with Engineers Australia.

'As a professional body we provide an outcome focused voice for Asset Management Practice.'

TOBY HORSTEAD



New Members

Aurecon Australia Pty Ltd	
Shane	Wild
APP Corporation Pty Ltd	
Andrew	Carkeek
Kevin	Chong
Andrew	Milliner
Chris	Treasure
Yash	Bajpai
Beca	
Ben	Danaher
Sudheer	Vyas
Paul	McIlveen
Terry	Niemeier
Darion	Parise
Steven	Zheng
Peter	Engelen
Marc	Keppler
Rachit	Patel
Eric	Montes
Wendy	Mack
Tariq	Yaseen
Stephen	Martin
Stephen	Winter
Talis Consultants	
Nicole	Garner
Penny	Robertson
Tiernan	Humphrys
Mary	McGeoch
Nikita	Sardesai
Masha	Lewis
Tayyab	Zubair
Bryson	Clemente
Steve	Droste
Lucy	Nitschinsk
Diana	Zagora
Weibin	Gu
Kon	Helidoniotis
Adam	Bristow
Nicole	McGregor
Sian	Killick
Lucid Consulting Australia	
David	Eyles
Maxwell	Kazuva

Peter	McGregor
Dorothy	Koukari
Peter	Awad
Kim	Appleby
Kabi	Subramaniam
Jim	Chen
Valmec Limited	
Santdas	Vaswani
Noel	Mancuveni
Mitchell	Miller
Kelly	Dohle
Thomas	Boxoen
Matt	Papaphotis
Samantha	Dias
NSW Telco Authority	
Lidija	Dumbaloska
Andrea	Parafina
Stephanie	Pearce
Lorrae	Pinner
Natasha	Imiya
Ben	Burnell
Olivia	Akdeniz
Anirban	Choudhury
Peter	Carr
Matthew	Hickman
Angel	Cana
Innika	Brown
Allan	Hull
Stephen	Cook
Harvey Water	
Joe	Pantad
Christian	Christodoulou
Hector	Bello
Lina	Valencia
John	McLeod
Julie	Saunders
Sarah	McCarthy
Anna	Bascon
Louise	Thomas
Michael	Harris
Muthukumar	Somasundaram
Sharangan	Vithiyatharan
Rosemary	Crowhurst
Louise	Loveland
Jana	Mladenoff

New Members

Anne	Modderno
Sarah	Stephen
Michael	Uhlig
Tony	Haouchab
Frank	Peylaire
David	Harrison
Damien	Dry
Yi	Yu
Richard	Windsor
Jesse	Jones
Daniel	Allen
Robert	Mason
Craig	Boddington
Graham	Kerr
Jon	Irving
Peter	Anderson
Andrew	McArthur
Diluki Savi	Wijetunge
Paul	Stevens
Brent	Hobbs
Iranga	Nanayakkara Hiniduma Liyanage
Murray	Gate
Joe	Tran
Matt	Watson
John	McEvoy
Edward	Stringer
Birgit	Dyrting
Cherry	Marquez
Warren	Carden
Jason	Odlum
Sherif	Hussein
Gerard	Kennedy
Ainsley	Solomon
Joel	McCreanor
Andre	van Daele
Colin	Hocking
Paul	Brice
Brendan	Gillen
Claire	Felber
Ronald	Du Toit
Robert	Tolich
Shashi	Budhwar
Caroline	Healy
Erik	Lichter

Jamie	Cullen
David	Calder
Venezia	Whitmore
Eugene	Evans
Mark	Robson
Fabricio	Barros
Paul	Martin
Prateek	Sharma
Binu	Bajpai
Michelle	McMillan

How Much KNOWLEDGE & EXPERIENCE *Protects Your Assets?*



ARE YOUR EMPLOYEES
ASSET
MANAGEMENT
COUNCIL
CERTIFIED?

Improve Retention ■ *Enhance Recruitment* ■ *Increase Portability*

Get the facts: www.amcouncil.com.au/certification

Membership Application



ASSET MANAGEMENT COUNCIL

ASSET MANAGEMENT COUNCIL LTD

A Technical Society of Engineers Australia

ABN: 15 141 532 747 www.amcouncil.com.au

Phone: +613 9819 2515 Email: accounts@amcouncil.com.au

Thank you for joining the Asset Management Council. Please complete all sections. Phone or email with any queries.

PERSONAL DETAILS (Please print in BLOCK CAPITALS)

Title (Please circle) Dr Mr Mrs Ms Miss Other (Please specify) Sex (Please circle) F M

Family Name Given Names (in full)

Date of Birth Engineers Australia Membership No

CONTACT DETAILS (Please print in BLOCK CAPITALS)

Preferred Address: Private Address or Business Address

Position

Organisation

Postal Address

City State

Country Postcode

Phone Fax

Mobile

E-mail

AREAS OF INTEREST (Please tick)

Technical Topics

- Reliability
- Availability
- Maintainability
- Performance
- Spares Planning
- Maintenance Planning and Scheduling
- Maintenance Plan development and implementation
- Maintenance Policy/Strategy development
- Logistics
- Shutdown planning and the maintenance interface
- Asset Management
- Other:

Issues

- Skills development
- Training
- Other:

Industries

- Facility Management
- Consulting
- Power
- Transport
- Defence
- Oil and Gas
- Mining and Industry
- Water and Utilities
- Infrastructure
- Other:

Return completed Membership Application with payment to:
Asset Management Council
PO Box 2004, Oakleigh Vic 3166

GROUP AFFILIATION

Young Asset Management Practitioners (18-35 year olds)

CHAPTER AFFILIATION (Please tick one)

Newcastle Canberra Sydney Illawarra Mackay
 Melbourne Adelaide Brisbane Hobart
 Darwin Overseas Gippsland Perth

MEMBERSHIP FEES Effective Jan 2015 (Please tick one membership type only)

Individual Annual Fee (including GST)

Member \$154.00

Student \$33.00

Corporate Annual Fee (including GST)

Platinum \$9,570.00

Silver \$1,804.00

Gold \$3,608.00

Bronze \$957.00

GST (10%) does not apply to overseas memberships.

CORPORATE MEMBER NOMINEES

Platinum – 30 nominees, Gold – 10 nominees, Silver – 10 nominees, Bronze – 5 nominees

Name	Email	Date of Birth (Mandatory)	AM Council Chapter
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Contact Asset Management Council to provide more corporate nominee details.

PAYMENT

Method of Payment (please tick one and enclose payment)

Cash

Money Order or Cheque drawn in AUD from an Australian bank payable to **Asset Management Council Ltd**

International Money Order

Credit Card
(Australian or New Zealand Bankcard only acceptable)

Credit Card Details Please charge my card (tick one card type)

Visa

Bankcard

Mastercard

Diners

American Express

Card no _____

Expiry _____

Amount \$ _____

Name on card _____

Signature _____

Date _____

Corporate Partners and Corporate Members

STRATEGIC PARTNER

Rio Tinto

PLATINUM

ASC Pty Ltd

Ausgrid

BAE Systems

BGIS

Downer Group

Pacific National

Rio Tinto

Serco AsPac

South32

Sydney Metro

Transdev

Transport for NSW

Ventia Pty Limited

GOLD

Airservices Australia

Alstom

Aurecon Australia Pty Ltd

Austal Ships Pty Ltd

Boeing Australia

Capability by Design

Copperleaf Technologies

Department of Defence CASG

Department of Families, Fairness and Housing

Department of Finance Western Australia

Department of Fire and Emergency Services (WA)

Department of Health

Department of Transport - Network Planning Group

Energy Queensland Limited

Essential Energy

Evoenergy

GE Digital

GHD Advisory

HATCH Ltd.

Health Infrastructure

Infrastructure NSW

Innovyze

Jacobs

KiwiRail

KPMG

Naval Ship Management (Australia)

Northrop Grumman Integrated Defence Services Pty Ltd

NSW Telco Authority

Parks Victoria

Port of Newcastle

Power and Water Corporation

Service Stream

Southern Ports

Stanwell Corporation Limited

Sydney Water Corporation

Territory Generation

Thales Australia Limited

TransGrid

Transurban Ltd

V/Line

Warship Asset Management Agreement Alliance

Western Australia Police Force

Western Power

Wood Plc (Australia)

WSP Australia Pty Limited

Xenco Pty Ltd

SILVER

AECOM Australia

AMCL

Anglo American Metallurgical Coal

Armidale Regional Council

AssetFuture Pty Ltd

Aurizon Network

Australian Rail Track Corporation Ltd (ARTC)

Babcock International Group

City of Gold Coast

Comfort Delgro NSW

Court Services Victoria

Department of Transport

Fire and Rescue NSW

Flinders Port Holdings

GHD NZ

Greater Western Water

ISS Facility Services

Jemena

John Holland Group Pty Ltd

Kellogg Brown and Root Pty Ltd (KBR)

Lycopodium Infrastructure Pty Ltd

Mackay Regional Council

Minset

New Zealand Defence Force (Defence Equipment Management Organisation)

Norship

Northern Territory Government Dept. of Infrastructure, Planning & Logistics

Nova Systems

Origin Energy

Programmed Facility Management

Public Transport Authority

PwC Australia

RES Australia

Sodexo Australia Pty

Stantec Australia Pty Ltd

Sutherland Shire Council

Sydney Opera House

Sydney Trains

TAFE Infrastructure NSW

Tasports

Unitywater

Water Corporation

BRONZE

ANSTO

APP Corporation Pty Ltd

Arup

Assetivity Pty Ltd

Atos (Australia) Pty Ltd

Australian Museum

Baker Hughes Digital Solutions Australia Pty Ltd

Ballance Agr-Nutrients

Beca

BetterAIM Pty Ltd

Brightly Software Pty Ltd

Brisbane Airport Corporation

CBC Facilities Maintenance

Channel Terminal Services

Covaris Pty Ltd

Cushman and Wakefield

DAS Consulting

Defence Estate Infrastructure, NZDF

Delta Facilities Management Pty Ltd

Department of Jobs, Precincts & Regions

Department of Planning, Industry & Environment

Department of Transport ITS Asset Management Section

Department of Treasury and Finance

Dubai Roads and Transport Authority

Egis Oceania Pty Ltd

Endeavour Energy

Fremantle Ports

Gladstone Area Water Board

Gladstone Regional Council

Global-Mark Pty Ltd

Goulburn Valley Health

Goulburn Valley Water

Hardcat Pty Ltd

Harvey Water

Horizon Power

Hunter Water Corporation

Innovative Thinking IT

Ipswich City Council

Lake Maintenance Corporate Pty Ltd

Landcom

Lucid Consulting Australia

LYB Operations & Maintenance Pty Ltd

Maca Infrastructure

Melbourne & Olympic Parks

Melbourne Water

Meridian Energy

Monash University

Nexus Global Australia

North East Water

Northern Territory Government Dept. of Infrastructure, Planning & Logistics

NRG Gladstone Operating Services

Onto Global Pty Ltd

OpenMove

Orica

Oropesa Port Management Pty Ltd

Osmose Australia Pty Ltd

Pacific Hydro

Port Botany Operations ATF Port Botany Unit Trust

Powerlink Queensland

Professional Construction Strategies Group Ltd

QENOS

Quality Management Australia

Quarterbac

Queensland Rail

Reeves Group Services Pty Ltd

Retriever Communications

Rockfield Technologies Australia Pty Ltd

SA Water Corporation

School Infrastructure NSW

SEQWATER

Shoalhaven Water

Silver Edge Technologies Pty Ltd

SPM Assets Ltd

STRUCTURED CHANGE PTY LIMITED

Strukton Rail Australia Pty Ltd

Talis Consultants

Taronga Conservation Society Australia

TasWater

TATWEER MIDDLE EAST AND AFRICA L.L.C.

Terotek (NZ) Limited

Townsville City Council

Unison Networks Limited

United Energy Services Pty Ltd

Valmec Limited

Verbrec

Victoria State Emergency Service

WaterNSW

Wesfarmers Chemical Energy and Fertilisers

Windlab

Worley Power Service

Yarra Ranges Council



ASSET MANAGEMENT COUNCIL

THE
ASSET
JOURNAL

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