THE FUTURE OF ASSET MANAGEMENT – HOW DO WE GET THERE?

To get to where we want our asset management system to be in five years’ time, we have to learn to leverage technology, writes David Robinson from asset management solutions company, Assetic.

Water agencies around the world aim to provide adequate and sustainable water services to their customers both now and into the future through the effective management of their assets. With the advent of the new ISO 55001 Asset Management System Standards we now have a standard language for asset management (building on PAS 55 and the IIMM) and the industry is shifting from an asset view of the world to one of service.

As the industry progresses into this mode of operation we will need to focus and understand what impacts our services, how we fund these things, and how best to manage that.

In service-driven asset management the question isn’t so much “what will the asset cost me if I do X?” but more “what is the service impact if don’t do X?” This means taking a short, medium- and long-term view of our services and decision-making to ensure we provide those services as effectively and sustainably as possible. To do this we need budgets linked to services and this is done via our assets.

In a nutshell, we deliver services through our assets. Each asset behaves differently and we manage this based on the services it needs to provide. We thus define strategies and budgets for the future, to allow us to continue to provide these services sustainably, either with existing assets or new ones.

To manage services in this manner we need to understand our levels of service, how they link to our assets, and what the impact will be if we change something at the asset level. In other words, we need Line of Sight in our asset management system – from our customers and services through to our assets and actions, finances and decision-making.

This is a shift in how we run our businesses that will require time and resources to move into a more strategic and ‘linked up’ business model. And, while the industry is heading this way and it’s great in principle, what about all of the asset ‘stuff’ we don’t have enough time in the week to manage? How do we move beyond the current status quo to a more strategic approach?

The answer to this question is vast and varied. We need to look at the impact of this shift and how we leverage our knowledge and capability as an industry to progress beyond the day-to-day and do more with less.

If we take a look at a cross-section of the water industry now, and look at what the current scenario and future might look like, it’s something like this:

What does the asset management system look like today?

- **Management** A buzzword at the board level but not a key driver; mid-level management focus mostly depending on background.
- **Approach** Varies by organisation, depending on key people.
- **Understanding** Means different things to each department: assets to engineering, dollars to finance, administration to IT, products/services to operations.
- **Information** Silos of knowledge and data – everywhere.
- **Technology** Big, expensive IT systems running at 20 per cent capability, handling the day-to-day, and delivering the value we hung our $5 hat on – right? They make us smarter, don’t they?
- **Maintenance** “That’s how it’s always been done, Bob knows why, just ask Bob. You know Bob, right?”
- **Planning** Our future projects are approved and in next year’s capital budget.
- **Strategy** We work under a company statement – finance has a strategy and we have some big capital projects underway.
- **Service levels** Yes, we know when we service our assets, thanks.
- **Line of Sight** What can I see? Get out of the way and I’ll tell you!

What does the asset management system look like in five years’ time?

- **Management** Key input to decision-making based on regulations, budgeting and social expectations; they know what ISO 55001 is.
- **Approach** Standard core process across industry and a key skill for all asset management staff. Training is provided as part of on-boarding.
- **Understanding** There is a common understanding and language in asset management, we understand how what we do relates to others.
- **Information** The internet of asset management. Companies and practitioners connected, improving as an industry, using benchmarks and analytics to identify best practice. We grow together.
- **Technology** Connected, affordable, smart systems that leverage and accelerate capability across industry. Handling transactions is old news… This is the age of asset intelligence!
- **Maintenance** We use intelligent maintenance procedures that are benchmarked and we actively contribute to knowledge development across the industry with the internet of asset management. Maintenance is based on values of service and risk; our maintenance managers are business-focused.
- **Planning** We base our planning on our future service strategy, we use tools and science to optimise our decision-making to make the best decisions for the long term. Our planning is based on the expectations and social responsibility of our customers. It’s a holistic approach across the organisation and we understand the impact of our decisions.
**Feature Article**

- **Strategy** This is what influences our decisions, drives our business and ensures we strive for our service goals for years to come. We are forward thinkers. We make smart decisions that allow us to deliver our goals and progress into the future both now and in the long-term.

- **Service levels** These are the core of our business and are constantly evolving. They determine what we provide and to what level we provide it; we focus on the outcomes and how best to deliver them.

- **Line of Sight** Yes! We know the impact to the customer if we change something in our services and service levels, and we take a ‘linked up’ approach to the asset management system and decision making.

**DRIVING THE SHIFT TO SERVICE-FOCUS BUSINESS**

Two examples of why we will shift to this service-based approach, where service levels drive decision making, can be highlighted by key financial impacts in any asset intensive company – Capital Funding and Depreciation Expenses.

**ASSET CONSUMPTION**

**Depreciation Expenses** If we depreciate our assets in line with the asset service life cycle (which is measured by physical assessment and based on Australian Accounting Standards), as opposed to fixed straight-line depreciation, we can shift our average depreciation from 3.0 per cent to 2.5 per cent per annum across a $5B asset portfolio and save $1.5M pa in depreciation expenses.

In Figure 1 we can see the difference in a single sewer main depreciation expense over a life cycle prior to a renewal point (before its end of life) using service potential-based depreciation and fixed straight-line depreciation.

**Figure 1. Asset value based on a fixed rate of consumption.**

The rate at which the asset is consumed here is not based on the actual behaviour of the asset, or how it relates to service levels and intervention points. Infrastructure does not degrade significantly in the initial years of its life and we renew it before it’s totally consumed – so why do we depreciate it that way financially? And would we wait for asset failure to renew or rel ine earlier?

The rate the asset is consumed in Figure 2 is based on the actual behaviour of the asset, the service levels and interventions points. In this instance we consume the asset based on our service expectations, and when we will intervene with a service improvement, which may be a partial renewal or rel ine, or new technology based on a gain and NPV decision.

**Figure 2. Asset value based on service potential consumption.**

**CAPITAL FUNDING**

If we optimise the way we plan renewals based on service level decision-making using analytics across the asset portfolio based on optimal intervention points from an NPV analysis, we can achieve a one per cent reduction in annual capital and still maintain services at the appropriate level, a saving of $1M pa based on a $100M capital budget. These two savings may seem high but the fact is they are realistic if we take a step back and look at how we consume and manage our assets based on the services they provide. These are measurable, repeatable, objective, tangible numbers that directly impact the bottom line.

**THE INTERNET OF ASSET MANAGEMENT**

To move into the world of smart decisions we need to move beyond the current day-to-day view that we have been working with for the past 10 years. If we look at how society has evolved over the past decade it’s all about information.

Why can we connect with a group of people on the other side of the world to auction a website design in the time it takes to read this article, yet we still can’t connect with our peers in asset management across the world (Figure 3) to share and develop our proven science in asset management without attending a conference?

This will change! Enter the Internet of Asset Management – a connected system based on standard data frameworks, search engines, benchmarks and analytics puts asset management information from other industries and companies at our fingertips at the click of a button.

**Figure 3. Unconnected asset management information in Australia.**
Figure 4. Future state: the Internet Of Asset Management.

How many reliability engineers over the last five years have done the same RCM process on a piece of rotating machinery and then measured the improvements that resulted? How many maintenance planners over the last five years have developed maintenance programs with world-class procedures and measured the resulting efficiencies and safety improvements? How many asset planners have investigated alternative treatment options for infrastructure or equipment and identified huge savings in capital and outages? A great many!

Now think about how powerful it would be if this information were available across industries, with benchmarked results, proven processes, practices and procedures available to every company with an internet connection. If we worked smarter (not harder) and leveraged off the best brains in the business to grow together in an accelerated fashion, imagine the results.

At Assetic we believe the Internet of Asset Management is the future and we have started the journey to enable this future state, as depicted in Figure 4.

**FOOD FOR THOUGHT**

In most other aspects of our lives we leverage off each other to improve the way we do things, and with the internet it’s now easier than ever. In the world of asset management we are about 10 years behind and still feel the need to sit face-to-face or listen to a speaker at a conference and then go back to our desks and try to replicate a similar process, from scratch, in our own environment. To move beyond the day-to-day grind we need to take a future-view. The answer is at our fingertips. Leverage our peers and technology to grow exponentially!

We can compare and choose health insurance based on future impacts to our family and save around $200 a year – yet we can’t compare our asset health and strategy with other organisations to possibly save millions and improve services. Time to catch up! WJ

**THE AUTHOR**

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