# An enterprise approach to managing Australia's creaking infrastructure network

## 30.5 million reasons to think about asset management

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BUILDING A BETTER WORLD

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Transforming business, making life simple

Australians expect our nation's infrastructure to sustain and improve our current living standards and quality of life, despite predictions of significant population growth and other economic, social and environmental upheavals.

Australia's population is predicted to grow from 22.3 million in 2011 to 30.5 million in 2031 – an increase of 36.5 per cent.[1] This population explosion presents asset managers with an urgent dilemma: demand for vital infrastructure is quickly outpacing their ability to deliver it.

For example, there is a critical gap between demand and supply when it comes to road infrastructure in major cities. The Bureau of Infrastructure, Transport and Regional Economics estimated that the cost of delays on urban roads in Australia was $13.7 billion in 2011, and projected that it would rise to $53.3 billion by 2031[1].

Moreover, a recent report suggests that Australian infrastructure is showing signs of alarming deterioration. Already, $47 billion of local government–owned infrastructure is in a 'poor' or 'very poor' condition [2].

Unsurprisingly, many are concerned about the ability of Australia's ageing infrastructure networks to meet the expectations of our growing communities, as well as those of future generations.

To address this, and ensure the nation's ageing infrastructure can continue to provide the required level of service, it is essential that infrastructure owners implement comprehensive asset management strategies and systems.

This white paper explores the benefits of taking an enterprise approach to asset management. It also introduces ISO 55000 as a benchmarking mechanism to help you develop a comprehensive enterprise approach to managing all asset types.

## The challenge: bringing it all together

With a rising population and ageing infrastructure networks, asset managers must adopt strategies that protect investments and achieve the desired levels of service, while reducing inefficiency.

However, many organisations appear to have stalled. They've found ways to deal with discrete aspects of asset management, but haven't adopted an enterprise-wide approach that takes advantage of new technologies and integrated data.

Traditionally, asset management has been broken into separate functions that are independently managed. So one department might manage repairs, another manages maintenance programs and yet another manages long-term capital planning and delivery.

As a result, different departments manage different stages of the asset life cycle, often with independent products that don't share a common interface or technology platform. And these incompatible systems each need to be maintained, upgraded and somehow integrated. In addition, different departments involved in asset management – such as HR, finance and procurement – often use different systems and processes. This creates significant challenges when you are looking to adopt a unified approach to asset management across the organisation.
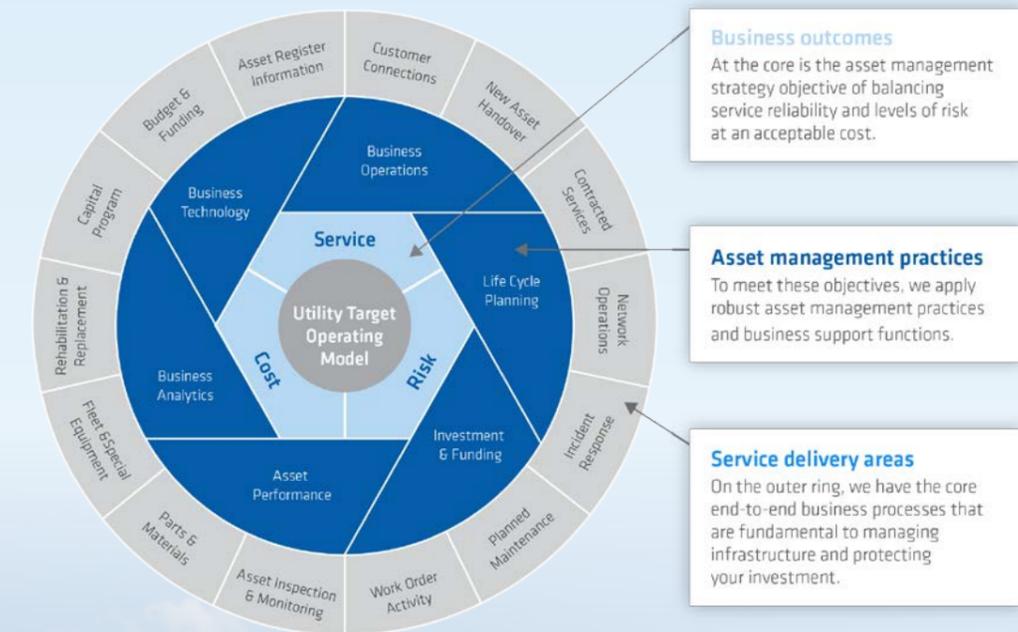
The lack of a single source of data is a significant problem. It's a little like an orchestra playing without a conductor. Each of the musicians may be a virtuoso soloist. And perhaps there are moments when different sections play together beautifully. Even so, without clear and confident direction, it's unlikely that the orchestra will be able to perform a great piece of music without making mistakes.

Why then are so many organisations finding it difficult to make the leap to an integrated enterprise-wide asset management solution? We believe this is primarily a result of the perceived complexity of deploying an enterprise asset management (EAM) solution.

Most organisations, after all, understand that an enterprise approach will allow each asset's performance to be optimised across its life. However, the processes an integrated solution must encompass – from asset performance monitoring to financial accounting – can be complex, even in isolation.

So how can you bring them all together in a way that strengthens your enterprise and prepares it for an increasingly complex future?

**Diagram 1: An example of a utility target EAM operating model**



**Business outcomes**
At the core is the asset management strategy objective of balancing service reliability and levels of risk at an acceptable cost.

**Asset management practices**
To meet these objectives, we apply robust asset management practices and business support functions.

**Service delivery areas**
On the outer ring, we have the core end-to-end business processes that are fundamental to managing infrastructure and protecting your investment.

## Technology-enabled EAM – greater than the sum of its parts

There is a real need to look at asset management from a strategic business perspective, aligning it with business drivers such as improving quality of life and services for communities, and creating liveable and sustainable cities. This is where EAM adds real value.

EAM is a macroscopic approach that delivers greater transparency and improved asset performance across their life cycle by breaking down knowledge silos and eliminating sources of inefficiency. Properly implemented, it provides a centralised source of asset information, including data on maintenance, as well as budgets, purchasing, and work and materials management - and more.

In the past, EAM was an ideal seldom achieved, but technology has now made it a real and viable option for organisations large and small. With a technology-enabled EAM system, you can gather data from across your organisation and review it on a single, easy-to-use platform.

This empowers you to be better informed when it comes to the five fundamental questions you set out to answer as an asset manager [3]:

1. What is the current state of my assets?
2. What is my required level of service?
3. Which assets are critical to sustained performance?
4. What are my minimum life cycle costs?
5. What is my best long-term funding strategy?

A technology-enabled EAM system provides a single repository of the knowledge and information required to answer these questions. This includes information on where your assets are, what their condition and expected life is, level of service requirements, asset capacity and performance, failure mode information, current maintenance costs, inspection history, life cycle costs and replacement profiles.

An EAM system thereby creates a centralised decision support mechanism, enabling you to make informed decisions that comply with reporting requirements. You will also be able to access the data needed to  plan, construct, acquire, inspect, operate, maintain and renew assets.

A single enterprise solution reduces the complexity of dealing with a number of specialist vendors, while eliminating the risks associated with using incompatible programs. In this way, an effective EAM system really is greater than the sum of its parts.
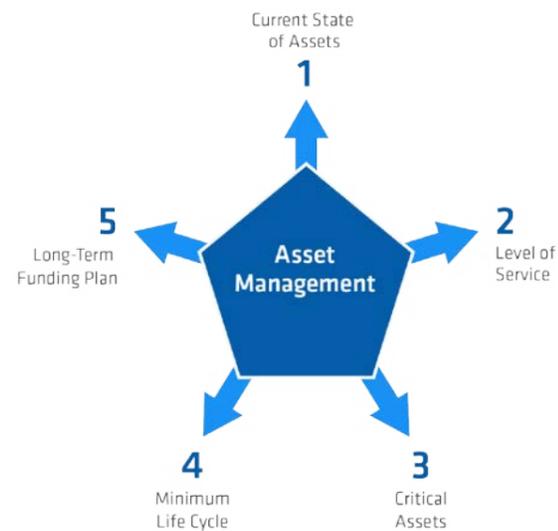
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**Diagram 2: The five key questions of asset management**

## Making the leap:
## ISO 55000 as a benchmark

At this point, you're probably curious about how to start the journey towards an integrated EAM solution. So what would a completely harmonised system look like and how do you make a start?

Published by the International Organization for Standardization (ISO) in 2014, ISO 55000 codifies the features of an optimal EAM system and outlines its expected benefits. ISO 55000 can be applied to systems for managing all kinds of assets in every type of organisation, from a local council to a multinational conglomerate.

ISO 55000 is based on four fundamental principles. Failure to adhere to any one of them will likely reduce the value that an organisation's assets provide. Consequently, these fundamentals should directly influence an organisation's EAM system and plans.

**Value: Assets exist to provide value to the organisation and its stakeholders.**

Asset management does not focus on the asset itself, but on the value that the asset can provide to the organisation and its objectives.

**Alignment: Asset management translates the organisational objectives into technical and financial decisions, plans and activities.**

Asset management decisions (technical, financial and operational) collectively enable an organisation to achieve its objectives.

**Leadership: Leadership and workplace culture affect value.**

Leadership and commitment from all managerial levels is essential for successfully establishing, operating and improving asset management within the organisation.

**Assurance: Asset management provides assurance that assets will fulfil their required purpose.**

Organisations should seek assurance of their assets, asset management and EAM system to ensure effective governance.

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**ISO 55000 in a nutshell**

In January 2014, ISO released its first series of standards on asset management.

The ISO 55000 series comprises three standards:

ISO 55000 provides an overview of the subject of asset management and the standard terms and definitions to be used.

ISO 55001 provides specifications for an integrated, effective management system and the standard terms and definitions to be used.

ISO 55002 provides guidance for implementing such a system.

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ISO 55000 is a platform to benchmark where you are now in your journey to EAM maturity, by comparing your business against global best practices. One of the key elements that can help in your pursuit of ISO 55000 is an analysis of your existing asset management practices. This will allow you to develop a continuous improvement plan to support your transition to a fully integrated EAM solution.

The good news is that you're probably closer to achieving ISO 55000 alignment than you realise. When you survey the different aspects of your organisation's asset management practices, you're likely to find examples of ISO 55000–compliant processes. But that's only the beginning. True ISO 55000 compliance comes from meeting its criteria across all asset classes and stages of the asset life cycle.

Many asset intensive organisations are held back from achieving ISO 55000 alignment because they lack the 'glue' that binds all of their asset management processes together. While their processes may work well in isolation, they require a  technology-enabled EAM solution to accelerate their progress towards asset management maturity and ISO 55000 alignment.  An EAM solution will provide a centralised platform to share the knowledge and information needed to effectively maximise the long-term value of your infrastructure networks.

## Conclusion:
## the devil is in the detail

As pressure mounts on our ageing infrastructure, the need to adopt comprehensive asset management strategies and systems is becoming more critical.

While implementing a solution that encompasses all aspects of your business can seem like a daunting and complex endeavour, EAM actually reduces complexity by providing a single view of your asset information.

Taking an enterprise approach will empower your organisation to quickly and easily make accurate decisions that reduce asset risk and increase sustainability.

## More information

Contact TechnologyOne to learn more about how your organisation can take advantage of a fully integrated EAM solution.

Contact MWH Global to gain an understanding of how a phased approach to ISO 55000 can enable you to benchmark and continually improve your asset management practices across the complete asset life cycle.

[1] Infrastructure Australia, Australian Infrastructure Audit Report, http://infrastructureaustralia.gov.au/policy-publications/publications/Australian-Infrastructure-Audit.aspx.

[2] Australian Local Government Association, National State of the Assets 2015, http://alga.asn.au/site/misc/alga/downloads/publications/ALGA_State_Of_The_Assets_Report_2015.pdf.

[3] United States Environmental Protection Agency, Asset Management: A Best Practices Guide, http://water.epa.gov/type/watersheds/wastewater/upload/guide_smallsystems_assetmanagement_bestpractices.pdf.

# Our approach



Market Focus & Commitment

Power of One

Enterprise Vision

**Transforming business, making life simple**

Simplicity, not Complexity

Power of Evolution

## Our enterprise vision

**The power of a single, integrated enterprise solution**

Experience the power of a single, integrated enterprise solution built on a single modern platform with a consistent look and feel.

## Market focus and commitment

**Preconfigured enterprise software solutions reduce time, cost and risk**

A deep understanding and engagement with our seven key markets means we can deliver to our customers integrated, preconfigured solutions that provide proven practice, streamline implementations and reduce time, cost and risk.

## The power of one

**One vision. One vendor. One experience.**

When you invest in a TechnologyOne solution you benefit from a direct relationship with us every step of the way. We do not use implementation partners or value-added resellers. We take complete responsibility for building, marketing, selling, implementing, supporting and running our enterprise solution for each customer to guarantee long-term success.

## The power of evolution

**An enterprise solution that adapts and evolves**

Substantial investment into R&D each year means we provide our customers a strong, continuing competitive advantage through an enterprise solution that adapts and evolves by embracing new technologies, concepts and innovation.

## Simplicity, not complexity

**Enterprise software, incredibly simple**

Software that embraces consumer concepts and expectations to deliver solutions that are incredibly easy to use and remove complexity.