Sydney Water's Data Strategy Makes the Insights Flow

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For Sydney Water's five million customers, quality and satisfaction can simply mean pouring a clean glass of drinking water. But behind this seemingly basic concept, there's a complex network of assets that are all underpinned by one thing: Data.

Ahead of her session at [Mainstream Conference](#), **Tammy Falconer, Head of Asset Knowledge at Sydney Water**, outlines the key steps they have taken to build a trusted data strategy and the benefits that are flowing onto their valued customers.

Drowning in Data? Not at Sydney Water

It's easy to take for granted that Sydney-siders have access to some of the highest quality drinking water in the world, and that our wastewater disappears, just like that. Behind the scenes, there's a huge number of assets delivering these services. We've been building and maintaining these assets for over 130 years to help make Sydney a liveable city and we're passionate and proud of our role in shaping the lifestyle of Sydney, the Blue Mountains and the Illawarra for generations to come.

With a long history, our older assets can provide unique challenges, particularly our underground assets where we don't have easy access to the asset to verify the accuracy of the data. We need to take a targeted and cost-effective approach to improve the data quality of existing assets and at the same time ensure that any new data meets the standards we require.

Focusing on Data Foundations

We've taken a business capability approach to maximising the value of our data focusing on four aspects: people, process, information and technology. We have a dedicated team working on getting our foundations of information management right, including data standards, data quality and metadata management. This approach enables us to maximise the value of that information in analytics.

Here is a run-down of three elements of our data improvement strategy:

1. Technology Agnostic Data Standards

At Sydney Water we have data standards that cover the various phases of the asset lifecycle. We've defined the rules for each data element across a range of data quality dimensions such as completeness and conformity. But key to the success of our approach has been becoming technology agnostic. Developing our data standards independently of the systems we record data in has helped us move away from a siloed system approach. We define which information about our assets are essential, and map that to systems the information is stored in.

Historically organisations have centralised asset information, but we know that isn't what the future looks like in a world where we use IoT. We're going to have multiple systems storing

asset information and we need to be able to join that information up and represent it in a uniform way. Our main focus is building data standards for the information we need on our assets, not which systems they are stored in.

2. Maximising Value Through Data Quality

Managing quality of data is time consuming and costly so it's important to define what data you really want to have under governance using standards.

Defining what data is most important to us is a key aspect of our strategy, and we measure the quality of this data in a monthly scorecard. Rather than simply updating incorrect data we use root cause analysis to work out: What's happening with our data? Why is that occurring? How can we resolve that? And what impact do our processes have on data quality? This ensures we take a continuous improvement and sustainable approach to managing data quality.

You may have heard Corinne Cheeseman speak at last year's Mainstream Conference about metadata management and the importance of cataloguing data, which in our case is a massive task. By doing this though, we know what data we have, where it is stored, how current it is, what it can be used for and what quality it is. This new approach helps us maximise the value we get out of each data set we have.

3. Delivering Trusted Insights

To improve our data driven decision making, our people need to trust the data that's being produced. A key analytics capability for us is modelling, and we need to trust this so we define and catalogue all data sets used as inputs; the scenarios that we model and all the model outputs such as dashboards or reports. We also measure and improve the data quality of our input data sets, ensuring they are fit for purpose.

A common scenario in organisations that don't trust their data is that when a report is produced people subsequently stand around arguing about whether the report is right. Sydney Water's end-to-end approach means that we can trust the output and start using the insights that we're getting to drive business improvement.

We recently developed our long-term capital investment plan to prepare for Sydney's future challenges by using an optimisation model. This has helped us understand the potential approaches we could take to staging our asset investments across multiple different drivers including growth, renewals, or enhancements. Our approach to managing data allows us to run different scenarios through our model to determine the optimal plan for our stakeholders and customers.

Get Proactive with Your Own Data Management

Peter Drucker once said, "what gets measured gets managed" and I think that's true for data quality. Until you define and measure data quality, you can't be proactive around improving the key data that drives decisions in your organisation.

My advice to other organisations looking to improve their data is:

- Define what data is important to you regardless of which system it is stored in and govern it

- Measure and track your data quality on a regular basis

- Invest in root cause analysis to identify and fix the causes of the poor quality

- Resist the temptation to simply fix data: I think it's very easy for organisations to take the approach of fixing data on a project-by-project basis such as when they do system upgrades. But that isn't sustainable in the longer term and it isn't ensuring that your data is fit for purpose when you need it to make decisions.

Hear more from Tammy Falconer and Sydney Water's proactive data management approach at [Mainstream Conference](#), 12-13 August 2019, Melbourne.