CoMET

The asset base is complicated and hence the incentivisation of operational performance under the TOTEX model brings with it a new set of challenges. Creating really tangible efficiencies and benefits in AMP 6 will rely on a much deeper Asset knowledge.

We believe that our customers' ability to use their data more effectively will be integral to them improving performance across every aspect of their businesses. By utilising data that already exists, and is already collected, we want to find pragmatic solutions to the asset related problems and operational issues that affect our customer's businesses. Our aim is to help our customers:

- Improve asset performance
- Make more intelligent capital investment decisions
- Reduce costs
- Improve customer satisfaction
- Pre-empt problems
- Increase safety

The weather is increasingly erratic and whilst forecasts can predict regional trends with reasonable accuracy, they are much less reliable where highly localised conditions or exceptional events are concerned. Consequently, any advance warning of the likely outcomes of localised weather happening across an area is highly desirable, especially if that can be generated in near real-time.

CoMET is a new tool being developed by Costain that harnesses' existing data, primarily to mitigate the impacts of weather, but with the potential to enhance service delivery across the board.

WHAT IS CoMET?

CoMET is an analytical model which employs state-of-the-art 'big data' and 'analytical' technologies. It will enable our customers to better manage their asset base through a greater understanding of how meteorological conditions impact on its operation and the end customer.

The insight gained from the model can be used to help determine any 'patterns' of circumstances that precede high impact events. The intent from this learning is twofold:

1. To develop CoMET such that it is driven by the customer's existing weather forecasting capability. Ultimately it will monitor circumstances in (near) real-time, giving advance notification of potentially impending high impact events.
2. To enable a much greater depth and granularity of understanding such that the best answers can be reached in relation to long term investment decisions.

CoMET can provide evidence-based data that may help with decisions related to:

a. Optimising asset maintenance and resource requirements
b. Ensuring the right capital investment choices,
c. Reducing the impact of weather on the end customer

WHY IS CoMET DIFFERENT?

Most organisations already use conventional models to manage or model the behaviour of various parts of their operations. Such models are theory-driven and therefore have narrow fields of applicability; for example, the drinking water model can say little about waste water, stream flow, or pump condition and operating efficiency. As a result the implementation of these 'silo' models makes it difficult to gain a holistic view of your business. To overcome these limitations, CoMET takes into account a much wider set of input data. These include amongst others geospatial data, meteorological data, maintenance data and customer data to undertake a wide-ranging holistic analysis.

One key advantage of this approach is that it becomes possible to detect otherwise hidden correlations between different parts of the business.

CASE STUDY: THE FIRST FLUSH

During long dry periods, solids can build up in the sewerage network. Rain moving across the relevant catchment area will cause these solids to move through the system very quickly, en masse, potentially causing serious blockages or significant mechanical and process plant failure. The impacts of this could include: breaches of consent and pollutions, not to mention the costs of returning the failed plant back to operational status.

CoMET, running in real time off a live weather feed, sends an alert 20 hours before the rain band is due to hit the catchment area. As a result the Regional Control Centre managing the network is able to mobilise a tankering team to the problem area of the network, prior to the rain fall, to remove the solids. Thus avoiding all potential impacts of the 'first flush' scenario.

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