

CASE STUDY: Proactive Asset Management

UK Water Utility

Overview

Proactive Asset Management enables businesses to predict incidents before they occur, and take preventive action in a planned, efficient manner. This solution helps prevent service disruptions and enhance customer satisfaction.

Highlights

- Holistic view of enterprise-level data
- Site-level predictive process controls
- Mathematical engine learns from historic data, feeds on live data, and identifies the building up of alarm situations and alerts business teams to take action

The Challenge

One of the key focus areas of regulation and investment in the UK Water Industry is Customer Service. OFWAT lays immense emphasis on ensuring that the customer is satisfied about the quality of service he/she receives from water utilities.

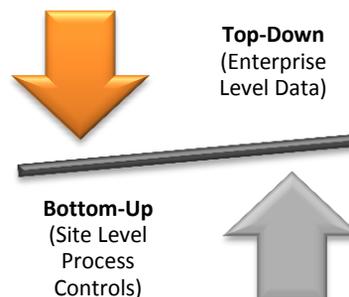
In order to rank well on customer satisfaction, it is imperative for water companies to ensure uninterrupted supply. Given the asset-heavy nature of the sector, this often proves to be a substantial challenge for water companies. Assets naturally tend to deteriorate with use, and fail in extreme circumstances. In this context, ensuring uninterrupted supply to meet customer expectations is quite a task, and has traditionally been an area of concern for the sector in general.

The Enzen Solution

In order to tackle the challenge of ensuring continuous serviceability of assets, Enzen came up with the innovative solution of Proactive Asset Management.

This solution helps predict incidents/faults in advance, thus enabling asset managers to undertake corrective action and prevent the incident from occurring at all. As the response to the alarm is initiated while the asset is still operational, it prevents service disruptions to end consumers. This permits managers to plan resource allocation efficiently, and handle the situation without a sense of panic.

Enzen's solution approach is bi-directional, in the sense of the definition below.



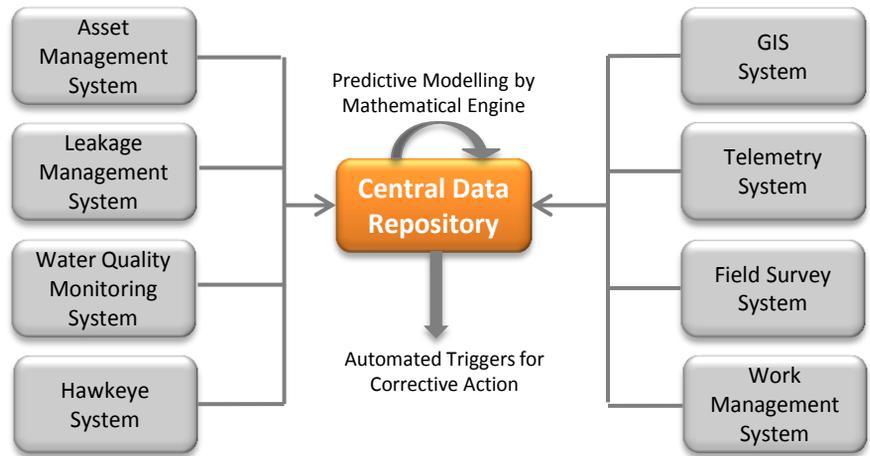
- The Top-Down approach takes a holistic look at the enterprise level data already held in the organisation, studies the patterns preceding an incident, and utilises that knowledge to detect future recurrence of such patterns and alert the teams
- The Bottom-Up approach looks at site-level SCADA and Telemetry, and establishes Predictive Process Controls through multi-variant analysis
- The combination of the above two approaches ensures that the business is enabled to identify potential asset failures in advance, and take preventive action proactively

Key Benefits

- Use of existing data implies greater return on investment already made
- Prevention of incidents enhances asset life
- Greater customer satisfaction, and improved regulatory standings

Solution Architecture

The Solution is depicted in the figure below.



The heart of this solution is the mathematical engine that is trained on models from historic data, and fed with live data in regular use. It is this engine that looks for toxic patterns and raises alarms upon detection.

Experience of a Water Utility in UK

Enzen devised this Proactive Asset Management solution based on experience from a similar framework that has been successfully deployed in the precision-oriented pharmaceutical industry in Europe. Placing faith in Enzen, and trust in the concept, a leading water company in the UK agreed to test with this solution.

The first phase of Top-Down study was scoped to a particular water supply zone in the customer's network, with focus on bursts, leakage and DG3. Enzen carried out extensive data analysis and modelling, and analysed the people, processes and systems in:

- Control Room Operations
- Leakage Management
- DG3/Bursts Reactive Work
- ME&I Operations

From the findings of the study, a set of 3 programmes consisting of business-oriented and IT-oriented projects were devised in order to set the platform for establishing predictive modelling techniques.

Without disclosing confidentiality, from past experience and knowledge of the industry, Enzen estimate that in excess of 15% of bursts could be predicted in advance leading to initial potential annual savings of over £100,000 for an average-sized water company in the UK. Further, as the mathematical engine will get increasingly accurate with use, these values are bound to rise with time.

The outcome of the study increased the customer's confidence in this innovative pioneering effort, and they are now taking the next steps to take the engagement forward.

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