



Affinity Water: data analytics underpin critical national infrastructure

Amazon Web Services, Talend and Datalytx expertise are helping the UK's largest water-only supplier to better meet regulatory and customer demands in the face of ever increasing ecological and social change



Client

Affinity Water provides clean water services to 3.6m customers in Southeast England.

Challenge

'commoditise' IT and reduce costs using a cloud-based approach, standardise data integration, better understand complex assets to optimise water supplies and so meet customer needs and regulatory requirements.

Solution

Amazon Web Services (AWS) platform, Talend for data integration/data quality and Datalytx support, including 'data lake' approach and specific project support for improved data management and analytics.

Benefits

more effective IT operations that are at a minimum 'cost-neutral'; enabling the company to operate successfully and meet business commitments, avoiding financial penalties from regulators; delivering new business insights and speeding up report delivery from days to minutes.

Employing over 1,400 people, Affinity Water supplies over 900 million litres of water each day to 3.6 million domestic and business customers in three English regions. The largest, Central, extends from Bedfordshire and Buckinghamshire into Hertfordshire, Greater London, Essex and Surrey. The smaller East region covers parts of Essex, while the Southeast region takes in coastal areas of Kent. Key activities focus on the abstraction, treatment, delivery and billing of water services.

"We're part of the critical national infrastructure: our product is essential to life," says David Clifton, Enterprise Solutions Architect at Affinity Water. "The key issue is maintaining

supplies in the most effective ways. There are many challenges in this sector that we can only overcome using data collection and analysis to improve our knowledge and understanding. We operate in the Southeast of England, the UK's driest region, an area the Government has designated as being under serious water stress. We must deal with a rising population of high water users and data and analytics can help us ensure there will be enough water for our customers' needs in the future." This is where the combination of current expertise and technology such as Amazon Web Services (AWS), Talend come in.

"Datalytx brings us the right skills. They help us exploit key technologies that operate and deliver our business commitments and meet our regulatory obligations."

David Clifton, Affinity Water

"The UK water industry is heavily regulated," David continues. "We are obligated to submit a business plan to our regulators in five-year cycles on how we intend to invest and manage those assets so we can ensure the delivery of clean water to our customers at the best possible costs. This Asset Maintenance Plan includes commitments to regulators and customers. To derive it, we need to analyse and model assets in various ways. For example, hydraulic modelling of the pressure required to feed water to properties with growing demand. Models to examine bursts - looking at our pipe network, different pipework ages, materials and wet or dry environments to try and reduce unplanned outages and customer interruptions. Analysing all that data is essential to how we operate, so we can understand our customers better and provide the best possible service to them."

AWS and Talend

"We made a strategic decision to move from traditional IT delivery to the cloud," David says, "AWS provides the ability to provision infrastructure services without the traditional upfront high capital investment and lead times." AWS was selected following a competitive tender: "Its services and cost model are hard to beat, at a time when it's increasingly difficult for individual IT people to stay abreast of all the new services and opportunities. Our future business operations will depend on the cloud: the ability to analyse data at any scale, with a few mouse-clicks, gives us unparalleled advantage that we could never be achieved using a traditional self-hosting IT model."

He says it was also essential to standardise data integrations: "to remove swivel-chair manual integrations and legacy script-based file transfers." For this, Talend was selected, initially to provide more batch-centric integration, although this is changing: "We're also exploring the Data Quality side of Talend, not least in light of future Data Governance programmes and impending cyber and data security commitments such as GDPR. Master Data Management will become one of our most important future initiatives."

Why Datalytx?

With Talend recommending Datalytx, David says the Datalytx team "brought the right skills in Talend and other applications such as SharePoint and K2. Datalytx provide a 'product support wrapper', allowing us to trade-off in-house skills." The largest Datalytx project to date has been developing a new centralised meter

reading management solution. Previously, information was held in a variety of systems including asset management, meter reading, billing and web portals.

The solution collects data from multiple sources, including Internet-connected smart-meters, loading it into a data warehouse structure for ease of management and analytics. New data sources can be added easily. "It's early days but the solution already allows Affinity Water to capture this data in one place, and is enabling us to meet our commitments to the new open market in the commercial customer space. A recent project Datalytx helped deliver focused on helping the company trade with other supply businesses efficiently for the fast and accurate settlement of bills. Going forward, this is the kernel repository that will allow us to analyse and understand the demands of customers. With automated meter reading and smart metering we can start understanding real-time events on our delivery network, to trace and fix leaks faster and reduce customer bills."

Benefits on tap

David adds, "Without this underlying technology we'd struggle to operate and meet our business commitments, and risk financial penalties from regulators and other areas, including requirements such as the EU General Data Protection Regulation (GDPR). We're certainly seeing gains from AWS and Talend. It's a little early to assess those in monetary terms, but we're certainly seeing benefits in lead times to deliver change." In telemetry, for example, data was previously analysed and reported from an old RDBMS, which wasn't optimised. "Using Talend and AWS Redshift means our business teams can now execute reports in minutes rather than hours or days. We had some reports we couldn't execute at all, due to the size of the database; these now run in less than an hour. With AWS Redshift provided 'as a service', a large amount of the IT operations needed to maintain underlying systems is taken care of, whilst we also have disaster recovery and restore options. Without the Talend Data Integration product, transmitting the data would be expensive and complex."

In terms of future, David says it's all about "Data, data and data. By that, I mean looking at mastering our data and analysing it, so that we can increase our operational efficiencies and reduce our expenditure. Data is a key ingredient for understanding, innovation and automation that will let us better understand demand, develop our real-time operations and situational awareness, and improve customer experience."

About Datalytx

Datalytx is a leading provider of big data engineering, data analytics and cloud solutions, enabling faster, more effective and more profitable decision-making throughout your enterprise. Datalytx specialise in deployments of data driven solutions, and leading implementations into high performance data environments.

Together with industry leading partners – including Talend, Snowflake, Cloudera, Ephesoft, Tableau, Thoughtspot, Zoomdata, AWS and Microsoft Azure – we deliver high quality solutions to diverse clients across multiple sectors. Our proven design patterns for data pipelines, cloud data warehouses and Hadoop data lakes are powering real-time and batch data processing engines across an array of sectors.

Our customers are now benefiting from the ability to ingest, curate, cleanse, integrate and enrich data from any data source or IOT device, at any scale and speed. Founded in 2008, privately owned, and with customers across EMEA and the US, Datalytx has become a specialist provider of choice for customers looking to successfully embark on, and realise the value from, modern real-time data architectures. Our Clients include AstraZeneca, JD Sports, BetVictor, Flybe, Calor Gas, iDirect and many more.



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