PORTSMOUTH WATER
UK WATER UTILITY COMPANY

CASE STUDY: IoT solution for the detection of water leaks
USING WAVETREND TECHNOLOGY AND THE SIGFOX LPWA NETWORK

Background

As water utility companies around the world know, securing our water supply is nothing less than critical to our future. Nature does not guarantee filling reservoirs and rivers, yet demand from an ever growing population continues to rise as does reliance on leaky, aging distribution networks.

In the UK, government regulators and water utility companies actively target leakage as a key factor in securing water supply and as Michael Roberts, Chief Executive of Water UK recently reiterated – *"Leakage is a big priority for the industry.....*
As well as increasing their work on leakage now, companies are all currently finalising plans to cut leakage by at least a further 15%, with some companies preparing to go even further".

The Water Company

Portsmouth Water (PW) is a UK water utility company responsible for the water supply and distribution covering an area of 868km^2 in the South of England.

Business Challenge

In the information age, real time water pressure is the preeminent metric to combat leakage but many technologies struggle to collect data that is both reliable and commercially viable. Portsmouth Water determined to meet or better government directives to reduce leakage, was looking for a viable way to collect real-time pressure information from the network remotely.

Jamie Jones, PW's Distribution Manager, was clear in his objectives. *"To meet our compliance requirements we measure water pressure manually, so there's a clear business case to reduce this cost."*

Solution

Wavetrend and their UK partner, Barter4Things (B4T), a provider of Sigfox's Low-Power Wide Area Network (LPWAN) worked together to offer an IoT solution that would perform in conditions that have historically thwarted mobile/GSM and Wi-Fi networks. To determine the suitability of the solution PW deployed traditional pressure and flow loggers in parallel against which the Wavetrend/B4T LWPAN data was judged.

In late 2017 the first test was determined to be a success, concluding that Sigfox could be reliably used for reporting data in remote areas, even under metal instrument covers in wet underground conditions. It also demonstrated that water pressure data can be measured in near real-time using Wavetrend's smart sensor device.

Results

The immediate benefit of using Sigfox's LPWAN over GSM is to cut the cost of communications by 80%, thus enabling a wider deployment of devices than would otherwise be possible. Statutory obligations can then be more efficiently met, and costly monthly visits to move a small population of GSM based devices to new locations are eliminated.

As a result of this successful initial trial, PW has now decided to include Sigfox's LPWAN in their technology strategy and have commissioned Wavetrend and B4T to develop prototypes and data services that could transform the way leakage is detected across the whole network.

The "Leaky Intelligence" service launched in October 2018 is described by Alex Barter as a landmark development between like-minded businesses to crack real-world problems. *"LPWAN technology has now found a firm foothold in the water industry."* Looking to the future, Alex said, *"Bringing Artificial Intelligence into Leaky Intelligence unlocks possibilities of predictive maintenance and self-healing water networks."*

Wavetrend are currently seeking to partner with Sigfox solution providers outside of the UK to integrate their water pressure device into solutions for addressing water leakage around the world.

WAVETREND