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Case Study

Cellular IoT connectivity for reliable remote pipeline monitoring

Syrinix
Intelligent Pipeline Monitoring

Syrinix

HQ: Norwich, UK

Employees: 50-100

Industry: Energy & utilities

Challenge

Provide permanent connectivity for intelligent pipeline monitoring

Collect data to reduce maintenance effort and costs

Solution

Utilize the Global Connectivity Platform to reliably collect data from pipeline monitor devices

● The need for consistent water transportation

Whether it's providing drinking water, watering gardens and fields, or removing sewage – modern life would quickly come to a standstill if the highly efficient water transportation systems for fresh water and wastewater were to collapse. If a single pipe breaks, the resulting impact can be significant. Apart from the inconvenience caused by disruption to the water supply, burst pipes can cause extensive damage to buildings, streets, and other aspects of infrastructure. Repairs can be very costly, time-consuming, and disruptive.

Ensuring pipes don't break is, therefore, a crucial task for homeowners, businesses, and the local authorities. However, monitoring water pipes can expensive and difficult since water pipes are generally underground and hard to access, making it a challenging task to check and maintain them.

Founded in 2004, British company Syrinix solves these problems by developing, producing, and operating devices that measure the critical parameters of water pipes. These small, cost-efficient devices and sensors allow for early detection of potential dangers before any damage is caused.

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Next-generation pipeline monitoring:
Securing water-pipe networks

Syrinix offers a family of solutions to track potential issues with pressure and flow in water pipes in several environments and for different use cases.

Their solutions include:

- **TrunkMinder:** A leak detection system for large-diameter water pipes.
- **PipeMinder-T:** An automated central-monitoring solution for leak detection and risk mitigation in critical trunk mains.
- **PipeMinder-S:** A solution that monitors water pressure in freshwater pipes; detecting anomalous behavior, network stresses, bursts, pressure transients, and negative spikes.
- **PipeMinder-C:** A wastewater pipeline solution that monitors flow, giving utility operators an insight into all events within a pipe such as clogs.

Syrinix's detection solutions also trigger real-time alerts in the event sudden critical changes that can have severe consequences for the system occur, such as abrupt and significant spikes in pressure. Utility providers are therefore alerted instantly to minimize any possible damage, and expedite solution finding and implementation.

Customization options allow users to determine what events should trigger alerts – for example, spikes of a given size, depending on the nature of the network and the material or state of the pipe.

Benefits for users

- With Syrinix, the utility provider is always in the know about details surrounding their network status. In addition to regular reports and real-time alerts, Syrinix's dashboard gives them all relevant information in an accessible, user-friendly format.
- Real-time detection allows immediate response – for example, shutting off a pipe before it bursts, before any real damage is done.
- Longer-term issues can be proactively addressed – by spotting potential issues before they become problems, proactive maintenance plans can be made possible.
- Syrinix's PipeMinder solutions extend the lifetime of water pipes by increasing the reliability of pipeline networks, while improving cost efficiency by substantially reducing expensive emergency incidents and repairs.

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Smart connectivity:
The key to real-time pipeline management

For Syrinix's solutions to work, its sensors must communicate reliably and cost efficiently, all the time, through cellular networks. They needed a reliable partner with communication technology that could fulfill three major requirements:

- Constant, ongoing connectivity
- Low cost
- No dependence on an individual mobile network

In EMnify, Syrinix found the partner that fulfilled all their needs.

EMnify is a German-based SaaS company that revolutionizes how IoT devices connect cellularly to business platforms and the cloud. The company was founded to serve the growing needs of developers, enterprises and CSPs who require secure, global connectivity for IoT and M2M applications.

EMnify's multi-operator cellular network is accessible through the EMnify SIM, which can operate instantly in over 185 countries across 540 mobile networks. In contrast to traditional mobile network operators, EMnify-powered devices roam across cellular networks, always selecting the network that provides the optimal connection for a device based on customer-defined pricing and service quality preferences.

This is exactly what Syrinix needed. With EMnify SIMs installed in Syrinix's PipeMinder-S and PipeMinder-C devices, they can now communicate continuously from anywhere with the utility network and send reports at defined intervals as well as real-time alerts. The SIMs work almost anywhere in the world and on any cellular network, allowing them to function seamlessly at any location.

> EMnify provides our solutions with continuous, uninterrupted, and secure connectivity at all times and from anywhere in the world.

Suzy Robb,
Marketing manager at Syrinix

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EMnify's platform is built to ensure the highest levels of cost efficiency. Its flexible platform ensures that connectivity costs are stable, eliminating fluctuations in expenses from country to country. Its global network eliminates the hassle of setting up technical and commercial arrangements in individual markets. Features like data pooling ensures that connectivity costs are manageable during sporadic data usage. This makes it possible for utility companies like Syrinix to control and reduce their mobile communication costs.

"The integration of EMnify's technology allows us to provide a simple, effective solution and provides two essential benefits," says Suzy Robb, Marketing Manager at Syrinix. "First, it provides our solutions with continuous, uninterrupted, and secure connectivity at all times and from anywhere in the world. Secondly, it allows utility companies to reliably plan their costs and minimize operating expenses. Without EMnify's market-leading features, our solution would be more complex, entailing additional connection link management in different locations."

About EMnify:

EMnify is a Software-as-a-Service (SaaS) company, revolutionizing cellular Internet of Things (IoT). Our connectivity management service provides mobile network operators, enterprises, and developers globally with technology connecting 'things'. The first to provide a mobile core infrastructure as a cloud service, EMnify enables secure, reliable and scalable connectivity, in ways previously impossible. EMnify leads the way towards a future without communication barriers. Today we serve customers from more than 70 countries, enabling innovative business models and IoT use cases across the globe.

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