

“ Accessing a low cost, flexible open source method of data capture and analysis is game-changing for them, the sector and the UK's net zero ambitions. ”

Devtank's innovative smart monitoring solution transforms SME manufacturers through data-led insights

A smart monitoring solutions specialist has accelerated the digital transformation of dozens of SME manufacturers using its innovative IoT device.

Devtank, based in Derby, has developed a disruptive environmental and energy monitoring device called OpenSmartMonitor, with the support of Made Smarter Innovation's Smart Manufacturing Data Hub (SMDH).

Through SMDH's Lighthouse Project, Devtank has been able to deploy its open source software and hardware to 50 manufacturers to capture environmental and energy which is analysed and displayed on its visualisation platform for transformational insights.

Data is also shared with SMDH's Manufacturing Data Exchange Platform (MDEP), a data mutual where anonymised data is reviewed using data science methodologies.

Sonya Coleman, Programme Director for MSI's Smart Manufacturing Data Hub, said: "Our Lighthouse Projects have enabled SMEs to embark on a smart manufacturing journey, de-risking major investment, yet enabling growth. Devtank's innovative solution is supporting and enhancing manufacturing SMEs across the UK to exceed and expand."

Chris Needham, Innovation Lead for Made Smarter Innovation, said: "The SMDH is a vital Made Smarter Innovation programme, offering SME manufacturers valuable access to expert guidance and digital solutions."

"This project is a great example of how the deployment of low-cost IoT devices and data analytics can accelerate manufacturers to understand energy usage, optimise production process and unlock opportunities for innovation across all operations."

THE INSPIRATION

For UK manufacturing to solve its productivity puzzle, increase its international competitiveness and achieve net zero emissions, then it must embrace the digital manufacturing revolution driven by accessing real and reliable data.

SMEs have historically been slower to adopt technology, lacking the technical knowledge and digital skills to adopt the latest data-led digital technologies.

Tim Telford, CEO and co-founder of Devtank said: "This is a critical point in our society where a dramatic shift is required to drive SMEs towards a sustainable future. While larger companies have rapidly embraced the challenges of the new paradigm and are currently working intensively on the introduction of Industry 4.0 technologies, SMEs are struggling. Devtank wants to help overcome that by offering SMEs low-cost solutions for energy management and environmental performance to identify efficiency and productivity opportunities."

THE INNOVATION

The project supported Devtank to develop its OpenSmartMonitor brand, a smart sensor called Open Sense, that uses open source software and hardware, and modular capability, to allow users many connectivity options including LoRaWAN, WIFI, Power-over-Ethernet (POE) and 4G/LTE.

This flexibility means that it can be applied to a wide-range of demands for measuring environmental parameters such as sound, temperature, light, air quality and humidity, as well as energy readings, including electricity, gas and water.

Data is collected, collated and displayed via Devtank's visualisation platform before being shared with the SMDH MDEP platform.

The project enabled over 50 SMEs-funded to trial the solution with up to five sensors.

Devtank also uses the project to create a scalable business model, called Sustainable Business Intelligence (SBI), which provides SME manufacturers an 'out of the box' digital dashboard to start registering data in real-time straight-away.

THE IMPACT

Devtank has identified and engaged with 50 SME manufacturers, deploying 300 sensors across those businesses to target a variety of challenges and opportunities.

While these companies are early in the process of analysing the data and seeing impact, early results have been promising.

A steel fabrication business used OpenSmartMonitor to identify and fix anomalies in machine downtime, increasing productivity by 10%.

Meanwhile, a door manufacturer has used the solution to improve machine efficiency and cut energy use, while also capturing humidity and temperature data to better control the storage of its timber materials and products.

Finally, Ritchie Precision, precision engineers based in Livingston, are now monitoring machinery, energy usage and environmental parameters with the aim of maximising efficiencies, reducing costs, reducing carbon emissions and maintaining a safe, clean working environment.



Hayley Potter, Quality Engineer at Ritchie Precision, said: "Visualising the data from our manufacturing processes has opened our eyes to the opportunity we have to introduce efficiencies into each and every aspect of what we do. The more data we gather the better our insights will get."

From a business perspective, the success of this project has given Devtank the confidence to increase its workforce by two additional employees.

The company has also secured a reseller in Germany and has interest from a reseller in Singapore.

Devtank has also benefited from connections through the MSI ecosystem and is in talks with another innovator for a potential software/hardware integration partnership.

Tim said: "We're not giving manufacturers a silver bullet to solve all their challenges, but we are giving

them a microscope to achieve marginal gains whether this is energy monitoring, machine monitoring, predictive maintenance or productivity insights.

"The results of these 50 use cases will be fantastic once fully deployed and integrated, enabling them to make data-led decisions, to do more with what they have, and to transform their business. And when you boil down those benefits, you will see energy efficiency improvements and a huge step towards the never-land of net zero."

"There are thousands of SMEs out there that need and want this technology to improve their business performance through resource efficiency analysis. Accessing a low cost, flexible open source method of data capture and analysis is game-changing for them, the sector and the UK's net zero ambitions."

