

Duo UK Leveraging data for material gain.

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Tom Gibson,
Production Manager



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A packaging manufacturer is accelerating data capture across its factory after a Made Smarter-backed project demonstrated 'game-changing' potential.

Duo UK, based in Manchester, has invested in a cloud-based software solution which captures shop floor data from machinery via sensors and displays it in real-time on a web app.

Initial tests have demonstrated the potential to reduce energy consumption, cost savings for competitive product pricing, greater efficiency, as well as increased productivity and output.

Tom Gibson, Production Manager, said: "Made Smarter's support, in terms of its guidance, the grant and workforce development, has not only made this data and systems integration project a reality but accelerated our future plans."

The Challenge

Duo's business strategy is two-fold. It wants to grow its market share in Retail, FMCG and industrial sectors, home and abroad. This means being more productive and efficient. Meanwhile, it is committed to reducing energy consumption and increasing its use of bio-based and recycled plastics.

However, the company has information gaps across their operation making decision making tricky. There is no current visibility of the amount of energy being used by individual machines or processes. Similarly, they don't know the definitive reasons behind machine downtime.

Tom explained: "We have 24 machines of a range of makes, models, sizes and ages. As a result, they have different demands in terms of power, running cost and maintenance. For too long we

have relied on a manual process of collecting data about the performance of our machinery which has resulted in accuracy issues and delays in analysis. We want to be able to see what's going on in real-time and have the data available to speed up decision making."

The Solution

Working with Made Smarter's technology experts, Duo identified Four Jaw as a suitable shop floor data capture software solution.

Sensors are connected to the machine to detect energy use and when the machine is in a productive or unproductive state. If downtime is detected, a tablet then automatically prompts an operator to select a reason.

This data is transferred to the cloud and accessed via a web app which shows machine performance and factory floor data, enabling operations to be monitored in real time.

The platform also compiles historic data and enables Duo to run analysis and bespoke reports.

The Benefits

The technology has so far been trialled on five machines and has already demonstrated valuable insights.

For instance, data comparison of two machines of different ages manufacturing the same product found the older of the two consuming twice the amount of power. As a result the business is exploring upgrading the older machine to improve its energy efficiency.

Duo is now working towards connecting all 24 machines to the network.

Tom explained: "This one example clearly demonstrates the business case and opportunities to be gained by investing in shop floor data capture technology. The impact of the trial was extraordinary. If you extrapolate those sorts of gains across the entire shop floor, it is game changing for our business. FourJaw offers simple connectivity - it takes 15 minutes to add sensors - and delivers a consistent view of the performance of all machines."

More informed decisions across the operation are forecast to result in a reduction in energy consumption, cost savings for competitive product pricing, greater efficiency, as well as increased productivity and output.

Data-led decision-making will support the business case for technology and equipment investment, and longer term strategies.

The introduction of digital technology on the shopfloor will upskill 80 factory operators working across its machinery, while department supervisors and managers will learn new analytical skills.

Tom said workforce engagement has been vital to the implementation solution.

"Naturally there was some resistance to change and concern which we have been sensitive to," he said. "The message has been clear: this will benefit everyone."



Data analysis will highlight opportunities to reduce its energy consumption and spend.

"Power hungry machines are one of our biggest costs. Efficiency gains through better understanding of these machines will reduce overall carbon footprint and save the company a considerable amount of money which can be re-invested in low energy technology and innovations."

"This technology also enables us to assess the impact of different materials on energy consumption and productivity. An example is recycled materials which can be inconsistent and vary in performance. This can lead to issues with machines which is frustrating for all. Using the data trends will enable us to easily identify the root cause of the problem and reach a

resolution quicker helping the whole team."

The Future

This new digital approach will accelerate Duo's ambitions to reduce the energy used in its operation and in turn the carbon footprint of the product supplied to their customer base.

Integrating the technology into its sister company Duclou Recycling based in Leeds, will support its activity to recover and recycle more plastic packaging and help manufacturers access good quality recycled materials enabling them to move away from using virgin plastics.

