

Lesk Engineers Precision engineers purchase high-end measuring machine with Made Smarter grant

Lesk Engineers specialises in precision engineering for a range of sectors and manufactures a wide variety of components to order for its customers.

Based in Worcester for more than 60 years, Lesk Engineers has worked with the likes of the Ministry of Defence, Rolls Royce, Morgan Motors, and many more.

The sectors it works in require extremely high-quality products and incredibly precise measurements. Lesk Engineers previously used an old coordinate measuring machine (CMM), which needed an upgrade so it could be integrated into digital decision making.

With help from Made Smarter, the firm applied for a match-funded grant to purchase a high-quality data rich CMM to replace the old one.

The grant application was successful, and the new machine is already boosting productivity by increasing capacity and reducing errors.

Gary Ketteringham, Managing Director of Lesk Engineers, said: "Made Smarter's expertise and guidance through the planning process meant we were able to get the capital we needed to upgrade our CMM. This made the process so much easier."

"Now the new machine is up and running, our productivity has increased dramatically and we are looking forward to growing our company further as a result."

The Challenge

With many of Lesk Engineers' customers being in the aerospace, automotive and defence sectors, many of the components it manufactures are used in

incredibly complex systems or vehicles.

This often means a high degree of precision is required, with even slight deviations rendering the component unusable.

To produce these components, Lesk Engineers uses its CMM which automatically measures components' dimensions without the need for a worker to do it manually.

However, Lesk Engineers' old CMM could not output data on measurements coordinates nor analyse the findings fast enough to keep up with product demand from customers.

To free the bottleneck, Lesk Engineers needed to capture and analyse data at a far greater rate and increase operations of the CMM to 24 hours a day without the need for workers to be on site.

This could be done by investing in a 'cobot' – a type of robot that performs functions alongside a human worker – which would operate the CMM while staff were away.

However, the company was unsure of the best options and was uneasy about investing capital.

Later, at a networking event in Malvern, Lesk Engineers' owner Jim McBride met Martyn Mangan, Digital Transformation Specialist for Made Smarter in the Worcestershire Growth Hub area.

Jim told Martyn about the challenges Lesk Engineers was facing, and Martyn explained the benefits of the Made Smarter programme and how Jim could register.

The Solution

Lesk Engineers already had a good idea about what type of CMM it was looking to purchase – an Aberlink Horizon 1000 renowned for its incredibly high precision and speed of measurement – but given the wide range of options it needed a second opinion.

After Jim and Martyn's initial meeting, Martyn organised a visit to Lesk Engineers to meet Gary. He was accompanied by Neill Smith from the Manufacturing Technology Centre (MTC) to assess the digital transformation journey the company were on, how the CMM fitted in with this journey and whether the machine was the most cost-effective solution for the company.

Martyn said: "When Jim and Gary told us about their aim to purchase a new CMM, we undertook an audit of their business to see if it would have the desired effect on productivity and profitability.

"After assessing their company's current and potential outputs with a new CMM, and how much money they were willing to spend, we felt they had made the right choice and recommended Lesk Engineers apply for a match-funded grant of £20,000 to help cover some of the costs.

"We guided them through the application process every step of the way and were in touch every day.

"And we were pleased to say Lesk Engineers' application was successful, which allowed the business to purchase the machine very soon afterwards."

Neill added: "MTC supported Lesk Engineers in assessing and understanding the need to apply digital technology to enhance their productivity.

"Its current CMM was a significant bottleneck to the business, but by supporting Lesk Engineers to invest wisely in a new CMM, the increase in throughput in the inspection process has been significant."

The Results

With the CMM installed, productivity has increased significantly at Lesk Engineers with orders being fulfilled more quickly, with higher outputs and fewer mistakes.

Parts can now be measured to within two to three microns of accuracy – or 0.002 to 0.003 millimetres.

And the CMM's rapid measuring has meant Lesk Engineers has reduced pressure on its staff and enabled them to take on more orders of larger sizes.

Gary said: "The old CMM was slow and somewhat unreliable – the comparison to our new machine is like night and day.

"We are now far less reliant on manual inspection which is very difficult to do precisely, and we can now confidently tell customers that we can turn around orders far more quickly than before.

"As a result, we've won more work and turnover is going up. The new CMM has been a game changer for us and we hope this success continues."

Phoebe Dawson, Director of Business Engagement for the Worcestershire Local Enterprise Partnership and Worcestershire Growth Hub, added: "It is great to see another Worcestershire business being supported via the Made Smarter programme.

"Lesk Engineers has been able to improve its productivity through this new machinery purchased via the grant programme which in turn is allowing them to complete orders faster and to a higher degree of accuracy.

"This result is fantastic and means that the business will be able to grow its operations and therefore help the local economy to grow."

The Future

Staff are currently getting to grips with the CMM's complex software, but Jim and Gary are confident that once mastered, productivity will be increased further.

And there is scope for even further enhancement of the CMM with the potential for a cobot to be synergised with the machine – which would allow for 24/7 production of components.

"The difference has already been dramatic since the CMM was installed, but the benefits will probably be even greater in the long-term," Gary added.

"A lot of what we produce for customers are repeat orders, and the goal for us is to write programmes for the machine's software that we can just select when a repeat order comes in.

"We are currently training our staff to learn the programming language so once they've written a programme for each part, when a repeat order comes in, they can simply load up the programme and let the CMM go to work.

"And if we acquire enough capital, we will look to purchase a cobot which could massively enhance our output.

"It would mean we would have genuine 24-hour capacity, and would take a lot of pressure off our staff.

"It's a big ambition, but we wouldn't even be in a position to consider it without Made Smarter's help. The team helped us through the unfamiliar grant application process and gave us great advice on how the CMM would boost our business.

"I'd encourage any business in manufacturing and engineering to get in touch if they need advice or help with improving their productivity."

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Gary Ketteringham, Managing Director of Lesk Engineers (left), and Martyn Mangan, Digital Transformation Specialist for Made Smarter in the Worcestershire Growth Hub area, with Lesk Engineers' new Aberlink Horizon 1000 CMM.

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