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Thomas Broadbent: Major machine retrofit for centrifuge manufacturer in the UK

Customer Story

The challenge

Thomas Broadbent is an established UK manufacturer of industrial centrifuges with a global reach. Currently celebrating their 160th year, the family-owned company is nevertheless at the forefront of modern thinking, embracing digital transformation to stay at the competitive forefront of their markets. Digital transformation is a key factor to help Broadbent be as successful in the next century as they have been in the last.

For instance, the company wanted to upgrade its Waldrich Coburg VTF 3500 portal milling centre – but needed a method of doing so that was affordable within its working capital needs, that did not impose unacceptable operational interruption, and that helped the company benefit from a phase change in productivity. Digital transformation of the machine also supported Broadbent's corporate desire to improve the company's sustainability footprint.

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The solution

The way forward offered by Siemens integration partner CT Systems - with the support of Siemens and SFS - managed to fulfil all these criteria. Knowledge of Broadbent's business, latest digital technology and smart financing were brought together in the CT Systems, Siemens and Siemens Financial Services partnership to make the solution possible and affordable. The solution proposed by CT Systems was a full retrofit of the machine. This would contain costs *and* carbon emissions, while making a major improvement in machine productivity.

Matthew Durkin-Jones, Finance Director of Broadbent, comments**,** "The powerful combination of CT Systems expertise, Siemens components and digital twin software, and flexible financing from SFS is critical to make this project work financially as well as technically. The tailored solution that suited our cash flow and working capital requirements is symptomatic of the way all parties – ourselves, CT systems, Siemens and SFS – worked in close collaboration to bring things to a successful plan of action."

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Using Siemens simulation and digital twin software, CT Systems are positioned to develop the retrofit over some 12 months – all in the virtual world and all off-site. This turns traditional retrofit timings – where development happens on site – on their head. Formerly, this retrofit would have taken three to four months of effective downtime – an unacceptable interruption for Broadbent to have the machine out of action.

Using the digital twin, physical installation and final live testing can therefore be compressed into just three to four weeks. Suddenly, this made commercial sense for Thomas Broadbent, with the installation period reduced to a commercially acceptable period.

Chris Haigh, Managing Director of CT Systems notes, "The digital twin capabilities make digital transformation possible at Broadbent without business interruption. Digital transformation also means we can install a remote diagnostics and maintenance capability. In fact, this is something we are now installing on **every** project we do. Again, this is a game-changer. It means that we can manage diagnostics and support over the internet, with machine information flowing through to me from its sensor arrays. It minimises time on site while improving the sensitivity of the service we can provide."

How it works

CT Systems carefully analysed what components of the machine needed replacing to achieve full modernisation and digital transformation of the machine. For instance, all field wiring was kept, along with the spindle motors, but a wholly new electrical panel was built with motor drive units replaced along with Siemens controllers.

All this will happen at CT Systems premises and in the virtual world. The original machine is continuing to do its job until the retrofit is designed, tested and finalised in the digital twin. Only then will on-site installation start, later next year.

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Mark Coombes, MTS Business Manager, Siemens Digital Industries, adds, **"**Digitalisation offers many advantages to OEM's, retrofitters, and manufacturers such as enhanced efficiency, cost savings and innovation. With all the digital tools available on Broadbent's retrofit project, the transparency on machine performance allows far more informed decisions on OEE (Overall Equipment Effectiveness) and other analyses. It makes projects commercially possible through advanced technology which just a few years ago might have seemed very difficult to achieve or justify."

Carolyn Newsham, Siemens Financial Services, concludes, "The digital transformation imperative is being felt right across manufacturing industry. But we're also in a tight economic period where input costs remain inflated. We're totally committed at SFS to using our expertise to bring flexible financing arrangements which make these investments in modern capabilities affordable and financially sustainable. The structure we have put together for Broadbent is a leading example of what good should look like."

Talk to the team

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https://www.siemens.com/en-gb/products/financial-services/asset-finance/financing-siemens-products-solutions/