

Electronics and semiconductor

Siemens Drives

Manufacturer uses the SIMATIC IT Preactor suite to increase throughput, cut work in progress and reduce inventory

Product

SIMATIC IT Preactor

Business challenges

Improve flexibility and efficiency

Introduce configurable products

Increase rate of growth

Keys to success

Gain visibility on long-term planning

View graphical data

Implement changes instantly

Results

Predicted future customer demand

Managed spikes in demand

Saved £30 million on first phase

Recorded four percent increase in delivery capability

Reduced inventory by 20 percent

Achieved 14 percent improvement in utilization

Cut work in progress by 60 percent

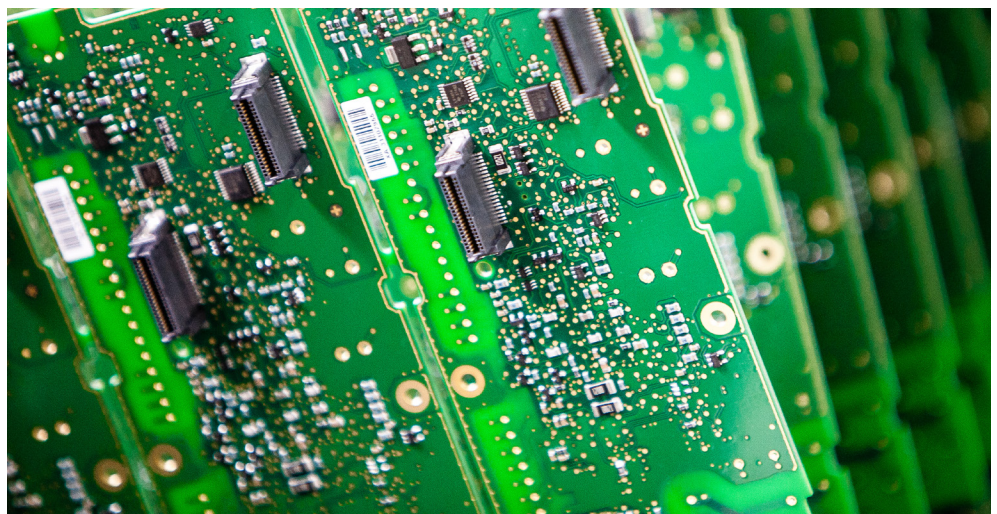
Siemens Digital Industries Software production planning and scheduling solutions support strategy for business improvement

A center of excellence with clear plans for growth

The variable speed drives produced every year in the small town of Congleton, 20 miles south of Manchester, travel across the world to be used by manufacturers looking to increase productivity, reduce time-to-market and cut costs. Established in 1971, the Siemens Digital Factory, Motion Control plant (Siemens Drives) employs about 450 people. With current output at approximately 470,000 drives per year, the factory supplies a range of

products that are bought both by end users and by companies that build control systems, machines and panels. By efficiently controlling the speed and torque of electric motors, variable speed drives deliver clear cost savings; they deliver according to Siemens Totally Integrated Automation concept.

As a role model for Siemens Digital Factory offerings, the Congleton plant is continually seeking to improve flexibility and efficiency. Congleton 2020 is a strategy for sustainable growth based on the ability to meet customer needs more closely and more quickly. Managing director at Siemens Drives, Andrew Peters, explains: "We provide technically innovative, energy-efficient products and have been keeping pace with market growth. However there is always





downward pressure on the price of electronics so our aim is to increase both our rate of growth and our share of the market. We can only do that by responding to customer needs; delivering more customization and introducing configurable products that are relevant to specific sectors and particular applications."

One major challenge for Siemens Drives is that the Congleton plant does not sell directly; it supplies a warehouse in Germany that fulfills orders from distributors and customers all over the world. With no pipeline of confirmed customer sales on which to base production, Siemens Drives must manage spikes in demand and sometimes needs to replenish warehouse stock with just four or five days notice.

Peters notes, "We have a successful record on delivery, but it has always been difficult to establish future customer demand, as well as time-consuming and costly to make any changes in production. We recognized that in order to move towards configurability, we needed more focus on our planning and scheduling functions."

Driven by the desire for process improvement and risk mitigation

Simon Evans, head of operational supply chain at Siemens Drives, describes some of the issues: "We'd previously had some in-house software but over time this had not been fully maintained. Stock levels,

"Our new planning and scheduling tools are changing the way we think as a factory, enabling us to focus more on customers and taking us to the next stage of lean production."

Simon Evans
Head of Operational Supply Chain
Siemens Drives

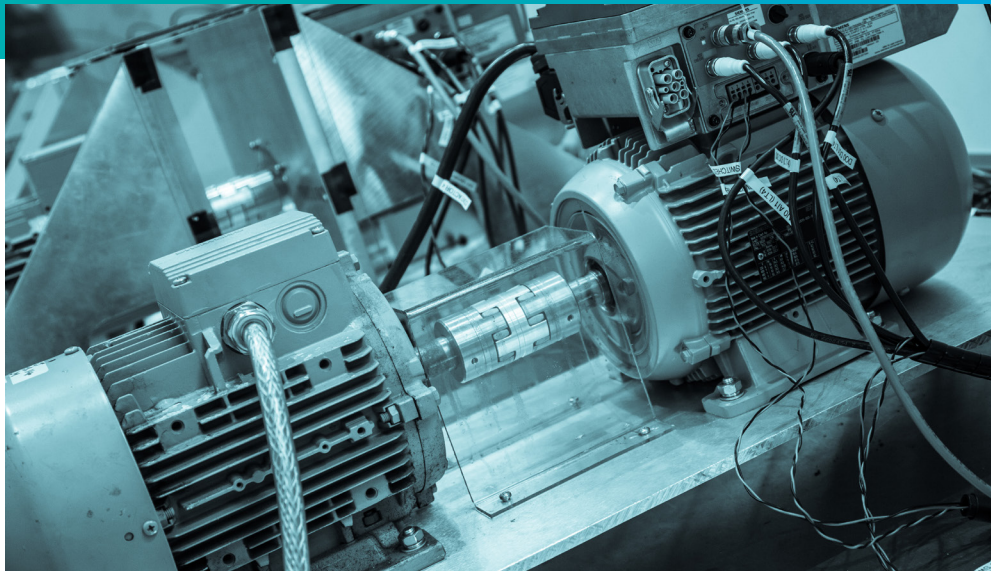
open customer orders and sales forecasts for monthly planning had all become the responsibility of one person using separate spreadsheets with numerous formulae. Delivery performance was very high but any manual approach is prone to errors and with responsibility all on one employee we had a potential single point of failure."

Sally Bright, planning team leader at Siemens Drives, was that one person. "We had little long-term visibility, particularly with regard to stock being available and in the right location," she explains. "For high running products with higher margins we could manage; but for the complex, low volume products in Value Stream 3 (VS3), problems were amplified. Because they take longer to build, lead times are longer. We worked on paper, creating a daily plan and telling the factory what to make, but it took a long time. Even if someone produced a schedule for VS3, it was not always clear that we had all the required items available. It was also very difficult for a colleague to step in and cover."

With everyone at Congleton keen to tackle these issues, Siemens Drives decided to implement the SIMATIC IT Preactor Advanced Planning and Scheduling tools. Peters points out, "We could see that this solution would lift us out of the habit of looking backwards at what we've previously done. Instead, the Preactor tools look for emerging patterns of demand so that they can highlight potential resourcing issues."

Reviewing data sources and business processes

Gena Leigh, IT demand and user engagement manager at Siemens Drives, led the implementation team: "Preactor draws from data reserves and it was our role to ensure that we supplied the data and put it into the right format; coordinated connectivity with our ERP system, SAP; and involved internal centers of expertise."



The team initiated large meetings with representatives from across the factory in order to confirm how to monitor inputs such as work in progress. These were followed by small workshops for internal experts involved in specific processes. "We posed questions and scenarios to them because the Preactor software is all about modeling," continues Leigh. "Where necessary we changed SAP processes in order to generate the data we needed. Preactor can take data from any application or database; it can also store data that does not reside anywhere else. We found this flexibility to be one of its greatest benefits."

"The process of implementation questions assumptions," notes Evans. "It demands a focus on inputs and the cleanliness of data. It also forces the maintenance of process. As a result, we have much better information on which to base decisions."

Control and clarity

The factory now has a graphical long-term planning tool that works on real data. "Instead of looking at the amount in stock, we can see how much we want to keep in stock and we get a clear answer about our capacity to make," says Bright.

"We have much better information on which to base decisions."

Simon Evans
Head of Operational Supply Chain
Siemens Drives

"We have seen massive benefits from Preactor."

Gena Leigh
IT Demand and User Engagement Manager
Siemens Drives

“Reliability and responsiveness are crucial for our customers and the Preactor tools are now part of our overall strategy.”

Andrew Peters
Managing Director
Siemens Drives

“What is impressive is the speed with which the system takes raw data and puts it in a plan,” says Evans. “Information is instantly pulled through from forecasting and we get a visible alert to changes. If we need to make an adjustment, we can do it very quickly.”

The production scheduling tool first went live on three product groups within VS3, where complexity is high and it is important to be accurate about the mix and match of stock levels. Barry Birch, software lead in Operational Technology at Siemens Drives describes the benefits: “Working from a range of attributes, parameters and constraints, Preactor does the sequencing and identifies the order in which to build circuit boards. Dependency charts clearly show how one process impacts on another.”

Optimizing delivery, inventory and utilization

Siemens Drives measures performance in terms of delivery capability (DC), which is the ability to deliver to a customer's own desirable deadline, and delivery reliability (DR), which is the ability to deliver to a confirmed date. Evans notes the immediate results of the implementation project: “We had been achieving near to 100 percent performance on DR so that was not really an issue for us; however, DC had been stuck for a long time at about 58 percent. Better planning led to immediate improvements in our days of cover and we

saw an instant rise in DC. That has now settled at 62 percent. On 1,000 customer delivery positions from stock each day, four percent represents a massive improvement.” The plant also measured a 20 percent reduction on inventory of finished goods, from €11 million to €9 million.

Previously, there had been delays at one of the final assembly stages within VS3. Complete clarity on the nature and sequence of production tasks means that operators can now set machines up more effectively. This resulted in a 14 percent improvement in utilization and a 60 percent reduction for semi-finished products in that production cell. “Work in progress (WIP) went down from £45,000 to £15,000; a reduction of £30,000,” reports Evans.

Agility and efficiency underpin future growth

Reflecting on the implementation process, Leigh notes: “Data quality was one of our biggest challenges because in some instances the data did not exist. We invested time and effort and we have seen massive benefits from the Preactor suite. The next phase will be much easier.”

Evans is very clear about the strategic contribution of the Preactor products: “Our new planning and scheduling tools are changing the way we think as a factory, enabling us to focus more on customers

“The Preactor tools are now part of our overall strategy.”

Andrew Peters
Managing Director
Siemens Drives



Solutions/Services

SIMATIC IT Preactor
siemens.com/preactor

Customer's primary business

Siemens Digital Factory, Motion Control (Siemens Drives) provides variable speed drives for the motion control of electric motors across a wide range of industries.
www.siemens.co.uk/low-voltage-drives

Customer location

Congleton
United Kingdom



and taking us to the next stage of lean production.” Siemens Drives is now looking at expanding use of the new tools, in particular addressing capacity planning, which will show whether the factory is operating below or above desired capacity and give a graphical view on bills of materials (BOMS).

“Reliability and responsiveness are crucial for our customers and the Preactor tools are now part of our overall strategy,” concludes Peters.

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