

NX

TelSmith

New CAM solution crushes old software's output

Industry

Industrial machinery, heavy equipment

Business challenges

Increase CNC programming output
Improve NC machine productivity

Keys to success

Easy changes to CAM models with synchronous technology
Associativity between CAM models and toolpaths
Integrated toolpath simulation and verification
CAM software's support for high-speed machining
Siemens 840D controllers on all new CNC machines
Strong technical support

Results

More CNC programs created in 3½ months with NX CAM than with previous CAM system in 9 months
NX generates more programs in spite of being used to program more complex machines

More CNC programs were generated in 3½ months using NX CAM than in 9 months using another system

Building giant machines

TelSmith, Inc. was founded more than 100 years ago to manufacture a new type of rock crusher for the aggregate industry. Today, TelSmith is still connected to its heritage, delivering new crushing and screening solutions to meet growing worldwide demand for mineral processing

equipment. In 1987, TelSmith was acquired by Astec Industries, a leader in asphalt plant technology. TelSmith formed the cornerstone of what would grow to become the Astec Aggregate and Mining Group. Today, Astec is the largest supplier of aggregate processing equipment in North America.

One of TelSmith's widely known brand names is Iron Giant, which gives an idea of the size of this equipment. Crushers can be up to 15 feet tall and weigh more than 60 tons. Fabricating these enormous



Results (continued)

Time savings measured in shifts, not minutes or hours

Internal performance rating ranks NX CAM 193 percent better than other CAM software

"NX CAM is brilliant. I can't wait to get another seat."

Michael Wier
CNC Programmer
Telsmith, Inc.



machines requires heavy-duty machining centers. For example, Telsmith has a vertical turning center that can machine parts as large as 106 inches in diameter, 98 inches tall and weighing over 100,000 pounds. On some parts the company removes more than 45 percent of the original material, which ranges from cast iron to 4140 steel forgings.

Telsmith has been working hard to keep pace with an increased sales volume driven by high metal prices and a weak U.S. dollar. For the company's CNC programmers, this means getting the most productivity possible from the machining centers. It also requires them to turn out CNC programs at an accelerated rate. "I need to program at a faster pace, to put out more programs than ever before," says Michael Wier, a CNC programmer in Telsmith's industrial engineering department.

Fast software, fast changes

NX™ software from Siemens PLM Software has been key to the programmers' ability to keep up. By switching from the previous CAM system to NX CAM functionality, Wier

is doing a volume of work that is far beyond what he was capable of doing previously. "In the past three and a half months I have already done with NX what took nine months with our former CAM system," says Wier.

Telsmith chose NX after a thorough evaluation of "just about every CAM system on market," according to Wier. NX was selected for a number of reasons. Chief among them was how quickly users could move through the various CNC programming steps. "NX doesn't require me to wait four to five minutes before I can move on to the next process," Wier says. "Its pure processing power is incredible."

Another major time saver is synchronous technology, a history-free, feature-based approach to creating geometric models. Wier finds this particularly important when making changes to existing CAM models. "Synchronous technology, one of the best features of NX, gives me the ability to directly manipulate and change features," he explains. "And because there is associativity between the model and the toolpaths, when changes are needed, it

Solutions/Services

NX
www.siemens.com/nx
Siemens 840D Controllers

Customer's primary business

Telsmith designs, manufactures, markets and services a full line of mineral processing equipment, including jaw crushers, cone crushers, impact crushers, screens and feeders.
www.telsmith.com

Customer location

Mequon, Wisconsin
United States

"Those controllers (Siemens 840D) give us the flexibility to do anything we can imagine."

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doesn't mean starting over and reprogramming. Synchronous technology allows me to quickly make a change to the geometry and my programming adapts to the change."

Simulating toolpaths in NX is another time saver because it eliminates mistakes that might otherwise be found on the machine. "I can't afford a programming mistake that might damage a part," says Wier. "With NX simulation, I can see it in 3D before it happens."

Telsmith rates its machines by programming difficulty and uses a formula to calculate the performance of its programmers. "The formula takes into account that it is easier on the more simple machines to generate a greater number of programs," Wier explains. "My programming score using NX CAM is 225 percent – 193 percent greater than the programmers using other CAM software."

Optimizing machine performance

With so much riding on its ability to keep machines running optimally, Telsmith values the technical support it gets from Siemens. "I can call in and talk to someone and my issue is resolved," says Wier. "There is no waiting for a day or several days. And I talk to the guru, who doesn't just solve

my problem. He might also suggest other ideas. Support people at Siemens try to make sure I have all of the information that will allow me to succeed."

Telsmith uses Siemens 840D controllers on all of its new machine tools. "Those controllers (Siemens 840D) give us the flexibility to do anything we can imagine," Wier notes. Because the company routinely machines large parts, and the goal is to reduce wear and tear on the machines and the tooling as much as possible, high-speed machining is used whenever possible. NX CAM provides extensive support for high-speed machining, including methods to ensure a constant rate of material removal and trochoidal toolpaths that are automatically selected to avoid over-embedding the tool.

Time savings made possible by NX CAM are not measured in minutes or even hours at Telsmith. "One of the benefits of programming confidently and delivering a product that is untouchable on the floor is pure cycle time reduction," Wier says. "We measure our savings not in minutes or hours, but by the number of shifts we save."

Siemens Industry Software

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