SIEMENS

NX

Verbom

Accurate, fast design is tool and die shop's secret to survival

Industry

Automotive

Business initiatives

New product development

Commonization and re-use

Knowledge and IP management

Production efficiency

Business challenges

Survive in the face of fierce overseas competition

Meet the tight delivery times imposed by auto OEMs

Keys to success

A highly automated die design process that supports lean manufacturing

Die design expertise captured in software

Results

Die design lead time reduced by 50 percent

Overall die development cycle cut by 8 weeks

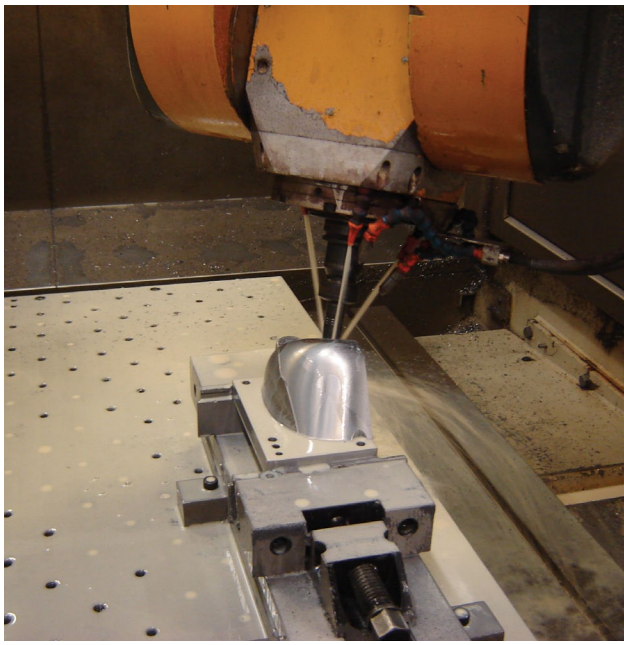
Increase in machine efficiency equal to two new CNC machines

NX highly automated die design process helps this North American manufacturer keep business from going overseas

Technology as survival mechanism

For more than 30 years, Quebec-based Verbom Inc. has been specializing in the design and manufacture of tools and dies. The automotive industry accounts for 80 percent of its business, which includes customers as far away as Mexico and Europe. Verbom has 150 employees and organizes more than 10,000 hours of training for them each year. Technology fuels the growth of the company, which is always on the lookout for industry developments. In fact, without technology, Verbom's president, Yvon Laplante, believes the company would have no chance of surviving in the current environment of inexpensive overseas labor. "In our industry, in 2006, tool and die shops in North America have such fierce competition that if we don't work more efficiently we will disappear," he says.

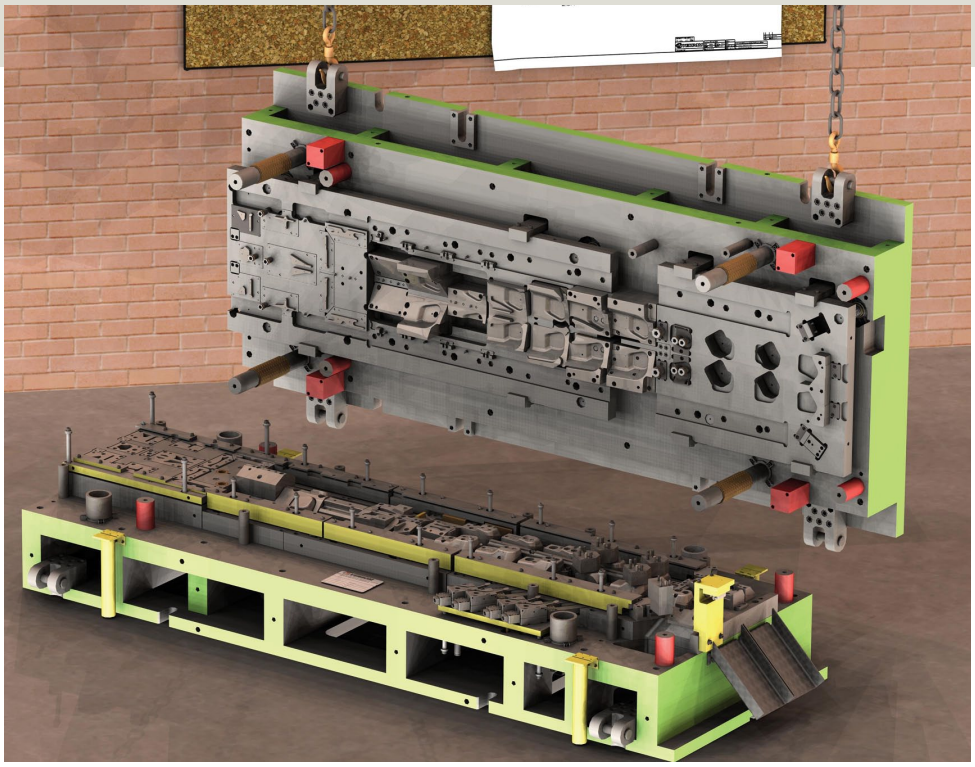
Laplante has focused a great deal of effort at using technology to make his company more competitive. Much of that effort has been directed at the design process. "It all starts with design," he says. "Any of our competitors can do good manufacturing, even overseas. But good design and fast design – that's what will keep our customers from looking elsewhere." Laplante has other reasons for focusing on the design



process, too. A more efficient design process is key to meeting the tight delivery times imposed by the automakers. Also, Verbom is adopting Lean Manufacturing, which Laplante believes is only possible with a correspondingly advanced design process. "People think you can't do lean manufacturing in a business like ours where each product is unique, but it's not true," Laplante explains. "The dies are different but the processes used to build them are the same each time. My thinking was that if we could incorporate this knowledge into our die designs, lean manufacturing would be possible."

"All this effort has to start with good software. We have accomplished what we have because of Siemens and NX's ability to capture our knowledge and processes for re-use."

Yvon Laplante
President
Verbom Inc.



Design as the foundation

After years of 2D CAD (AutoCAD), followed by a hybrid approach (2D work done in AutoCAD and 3D work done in Cadkey), Verbom wanted to move exclusively to solid modeling. Its first attempt was with SolidWorks but that was soon abandoned because it couldn't handle the complex shapes of automakers' parts. The company then installed Siemens PLM Software's NX™ product development software, which was not only capable of handling those shapes but in many cases NX was the automaker's software as well.

That was in 2001. After a few years, Laplante realized the software wasn't being used to its fullest and called in the local Siemens representative for a consultation. "We asked Siemens how we could be more productive and they came up with a list," says Laplante. Following that advice led to the acquisition of some additional software, NX Progressive Die Design, as well as some customization work to capture Verbom's die making expertise within NX. The result of that effort is a highly automated die design process that has slashed die design time by 50 percent.

Automated and integrated

Design tasks that are now performed automatically in NX are completed in just a fraction of the time they previously required. For example, die bases are created in minutes by NX Progressive Die Design after the designer enters some basic information about the die. Automatic bill of material generation is not only much faster than the manual alternative but more accurate as well. Verbom has also automated the ordering process for purchased components. NX component information goes automatically to an Oracle database and then to suppliers. Other automated operations include pricing and creation of detailed manufacturing process information for the shop floor.

The last item illustrates how Verbom is using its NX-based design process to support its Lean Manufacturing initiative. "To achieve Lean Manufacturing, we have to reduce shop floor management," Laplante explains. "The manufacturing information we generate with NX makes it very clear for the people on the shop floor exactly which processes to use. This information is contained in the design data from the

Solutions/Services

NX Progressive Die Design
NX CAM
www.siemens.com/nx

Customer's primary business

Verbom offers complete services in the design and manufacturing of tools, as well as inspection and manufacturing of prototypes.
www.verbom.com

Customer location

Valcourt, Quebec
Canada

"With the advantages of NX Progressive Die Design and NX CAM we essentially doubled our design capacity by halving design lead time. We also increased machining capacity by 15 percent on 15 machines. All of this sums up to increased profitability.

"Our deployment of the integrated NX Progressive Die Design and NX CAM system enabled us to slash our overall lead time by 30 percent, which would have not been possible using disparate 2D design and 3D CAM software applications."

Yvon Laplante
President
Verbom Inc.

beginning." In addition to reducing the manufacturing management staff, this embedded knowledge also supports best design practices. "In the past, people without much experience were doing some strange designs that were a nightmare on the shop floor," he adds. "That doesn't happen any longer."

Verbom also uses NX CAM functionality to automatically generate tool paths from design information. This saves times especially when there are design changes, which is often. "We are dealing with design changes every day," says Laplante. "If a car maker changes a part, for example, we have to change the die. We start with the strip layout and that dictates the die design. So if we change an angle or move a bend line or a hole on the strip layout, everything else on the die is automatically updated, even the tool paths. Everything is linked in NX."

The difference between profit and loss

CNC programming now takes so much less time that programmers use their time to optimize machine operations. As a result, machine efficiency has improved significantly. "Our machines were running at about 45 percent capacity before, and now we're up to 60 percent," says Laplante. "That's a 15 percent increase on 15 machines, so it's like we have two new CNC machines."

Before implementing this NX-based automation, Verbom's average cycle time for die development was 28 weeks. Customers were pushing for 22 weeks. "It was rush all the time and we had to put in a lot of overtime," says Laplante. "Since we automated our engineering, we're down to 20 weeks, and that eight-week improvement is the difference between profit and loss." Laplante plans to get cycle time down to as low as 14 weeks. That will mean taking even further advantage of NX, which he trusts to provide all the functionality Verbom needs to keep its customers from going overseas. "All this effort has to start with good software," he concludes. "We have accomplished what we have because of Siemens' and NX's ability to capture our knowledge and processes for re-use."

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