

Industrial machinery and equipment

Otto Bihler

Machine tool maker builds in expertise to increase customers' productivity

Products

NX, Teamcenter

Business initiatives

New product development
Commonization and re-use
Production efficiency

Business challenges

Capture the knowledge
resources of the company
Pass this knowledge to customers to ensure their success

Keys to success

Migration to 3D CAD/CAM
An integrated platform for
digital product development
Proprietary NX-based
application

Results

Company's knowledge is
transformed into a saleable
product
More than 100 customers are
leveraging the benefits of new
technology

NX-based application helps customers successfully adopt proven methods and processes

Giving customers more

Machine tool customers expect more than just hardware from their suppliers. They also want economically efficient solutions for their day-to-day production challenges. Otto Bihler Maschinenfabrik, a leading worldwide provider of stamping, bending, welding and assembly automation, delivers that added value. The company transfers production-proven forming knowledge directly to its customers through consulting, internally developed design and testing processes, as well as the Bihler NX software solution (bNX), which is based on the NX™ digital product development system from Siemens PLM Software.

For some years Bihler had offered its customers CAD/CAM solutions that incorporated special advantages for sheet metal unfolding as well as 2D drawing and tool design. But the increasing need for more innovative products, along with shorter development cycles and the higher complexity of manufactured parts, made the 2D technologies obsolete.

Company-wide 3D

Bihler designs about 85 percent of its machines from scratch, according to customers' specifications and requirements. To gain bottom-line success, even under the pressure of global markets, the



company depends on a highly efficient, integrated development process, from sales through design and manufacturing.

Mathias Bihler, a descendant of the company's founder and today's managing director and owner, was an early supporter of using 3D CAD and a master model that would move from design to manufacturing without data conversion. As a software industry insider, the machine tool builder had already evaluated 3D technology, conducted preliminary evaluations and performed some benchmarking. He had even developed an approach to implementation. At that point, he made the strategic decision to establish a partnership with

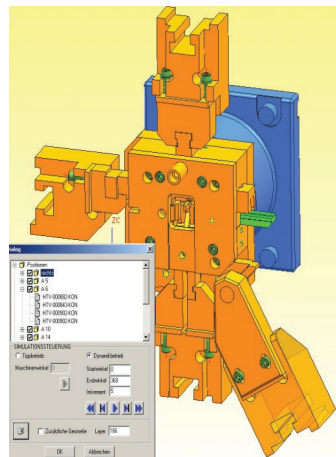
Results (continued)

Significant increase in productivity

Huge reduction in manufacturing costs

“Our customers receive an ideal tool for 3D collision detection that allows them to verify and optimize the complete forming sequence.”

Peter Bertling
Executive CAX for Consulting and Sales
Otto Bihler Maschinenfabrik



Siemens PLM Software and to implement its 3D, digital product development system, NX.

In addition to the many NX advantages in functionality and its tight connection with Siemens' Teamcenter® digital lifecycle management solution, which was implemented as the company's product data management (PDM) system, the main reasons for the selection of NX were the software's openness and end-to-end integration. "With an equally open and cooperative Siemens project manager, we were able to identify and achieve our goals step by step," says Hermann Schwarzenbach, CIO at Bihler. It has been an important advantage for his department to have only one product, company and contact person for all of the solutions along the process chain.

The initial implementation included 70 seats of NX and Teamcenter in product engineering and 15 NX CAM and Teamcenter seats for manufacturing. Teamcenter, the single source of engineering product data, was eventually extended to all business units. By adding a product configurator as well as numerous user-specific applications, the installation

became a model in consistency, complexity and depth.

Special software for sheet metal forming

Schwarzenbach identifies one of the main issues for the 3D migration. "It was necessary to have detailed guidelines for all aspects of 3D CAD/CAM and PDM to guarantee high-quality design data," he says. Bihler developed a standard and comprehensive design methodology that was improved and widely introduced in a pilot phase that lasted several months. Later all designers were trained in the methodology by in-house staff to establish a standard approach.

Bihler redesigned and expanded its former 2D application using NX as the platform for a complete progressive die development process. Starting with a customer-specific part, the bNX software creates the definition of the necessary tool assembly within the 3D environment of NX. The bNX analysis module helps the tool designer prepare parts for bending and cutting operations. Complex parts are imported into the CAD system using standard interfaces. With the NX sheet metal functionality and Bihler's "forming study"

application, the bent part is unfolded in just a few steps using a standard approach. This includes taking the K factor of the material into consideration.

The kinematics module provides tools for defining specific material feed, CAM timing and NC-controlled tool movement parameters. Tools for dimensioning, performance calculation and manufacturability evaluations target the maximum unit capacity. The Bihler standard parts selection system offers product-specific information. Finally, the simulation module validates that all tool movements are properly defined per the functional plan.

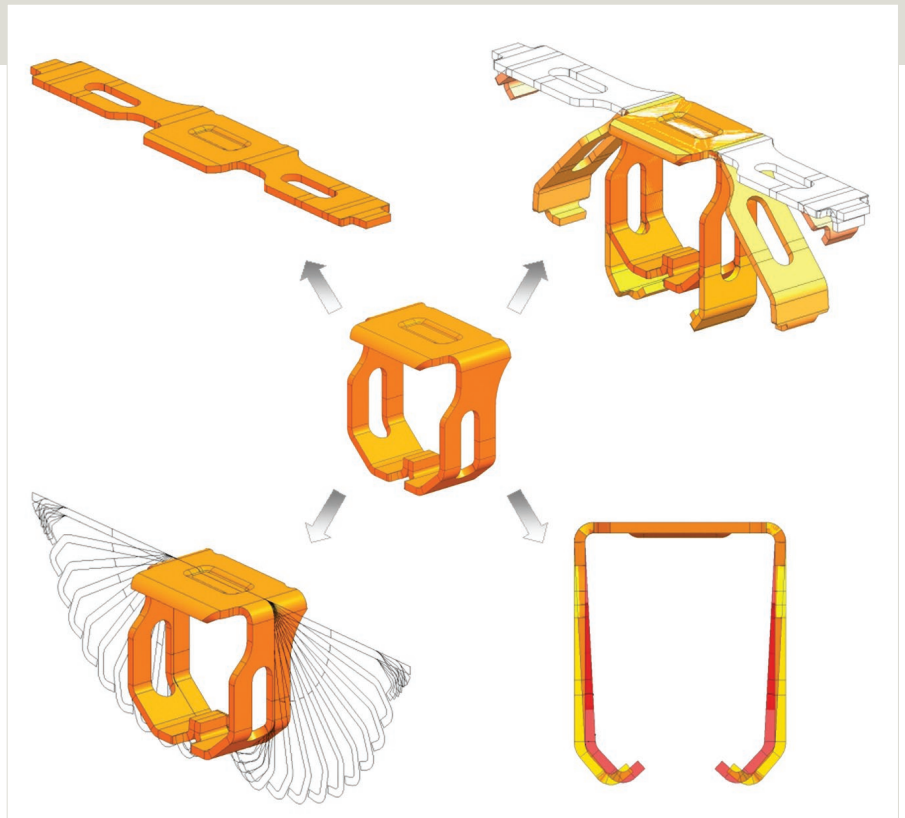
"Our customers receive an ideal tool for 3D collision detection that allows them to verify and optimize the complete forming sequence," states Peter Bertling, executive CAx for consulting and sales at Bihler. "They not only save time and development effort, but also production costs for prototypes."

Changing with the industry

Since the market launch of bNX in 2005, Bihler has migrated 130 existing software customers to 3D, and has also gained a number of new prospects. "During this process we found ourselves as NX providers," says Bertling. (Customers need NX licenses to take advantage of bNX.) To ensure the application of proven methods of parametric construction, Bihler also

provides training and implementation. "With our experience in progressive die design, customers have a very short learning curve," he adds.

Bihler's software business contributes only a small amount in terms of revenue. But the strategic aspect of being a solution provider with a constantly growing service business is important. "We provide professional contact people for all questions



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Solutions/Services

NX

www.siemens.com/nx

Teamcenter

www.siemens.com/teamcenter

Customer's primary business

Otto Bihler Maschinenfabrik has evolved to become the world's leading company supplying forming, assembly and welding technologies as well as CAD software for punching technology.

www.bihler.de

Customer location

Halblech, Bayern
Germany

"The partnership with Siemens PLM Software allows us to offer our large client base a continuous lineup of services – from consulting all the way to complete software solutions."

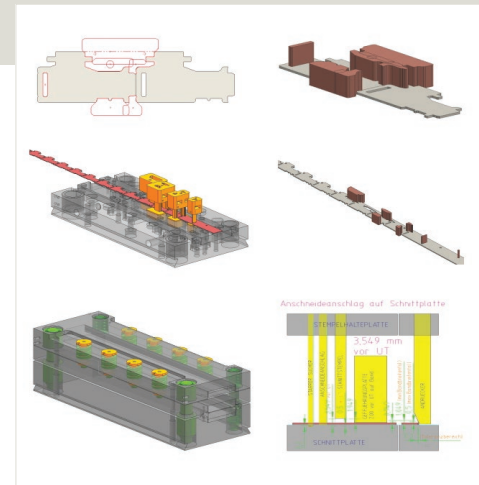
Hermann Schwarzenbach

CIO

Otto Bihler Maschinenfabrik

concerning efficient production," says Schwarzenbach. "Consulting is becoming more and more important. This covers the choice of machinery and materials as well as tool design and knowledge capture for the whole process. We are making this expertise available to our customers."

The ongoing changes within the industry make expert knowledge and experience sought-after goods. Siemens' NX and Bihler's bNX technology package combine to make Bihler's valuable company knowledge available for customer benefit. The outcome: Bihler's customers are more profitable and as a result they are more loyal to Bihler.



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