

Industrial machinery and heavy equipment

Otto Bihler

PLM integrates entire machine development process

Products

Teamcenter, NX

Business initiatives

- New product development
- Value chain synchronization
- Production efficiency

Business challenges

- Derive customer-specific solutions from new-generation machines
- Develop, document and install complete, innovative manufacturing processes
- Manage more inquiries with same number of personnel
- Increase the company knowledge base

Keys to success

- An end-to-end platform for digital product development
- Company-wide project and document management
- Visibility of all divisional and functional data
- A central database for total product lifecycle management

Teamcenter manages all technical data and documentation within a project context that is maintained throughout the product lifecycle

Sheet metal specialists

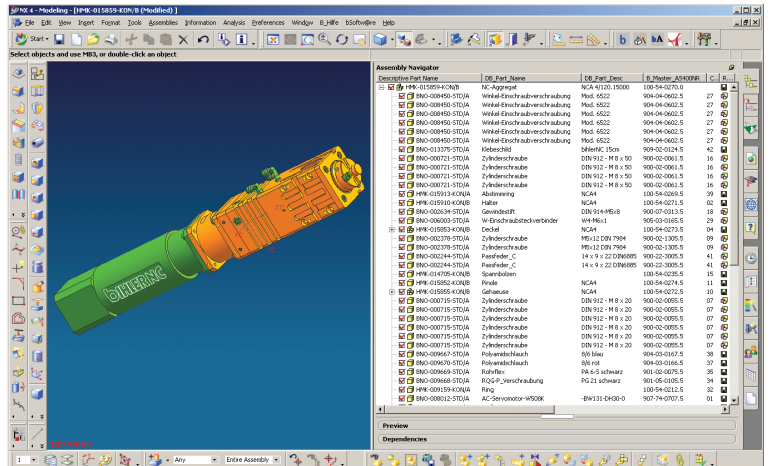
Nearly every sales contact with Otto Bihler Maschinenfabrik starts with questions about sheet metal. That is Bihler's specialty; the company is known the world over for its sheet metal expertise. Questions can involve either simple or complex manufacturing problems, but all must be solved economically and according to the technical requirements of the customer's application using Bihler's stamping and bending machinery and software services.

A major challenge for this company with 950 employees worldwide, several plant locations and many subsidiaries is to combine a top-down definition of the best facility with the most efficient bottom-up processes for design and manufacturing. It is even more difficult to implement these ideals with a modular machine program while making use of process knowledge

and fulfilling the long-term requirements of a market leader.

Upgrading to PLM

Bihler decided to partner with product lifecycle management (PLM) specialist Siemens PLM Software to address these challenges. The overall vision was to implement Siemens PLM Software's NX™ software, making NX the basis for engineering and manufacturing of a modular product system covering all types of

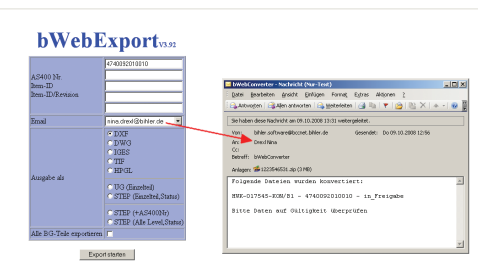
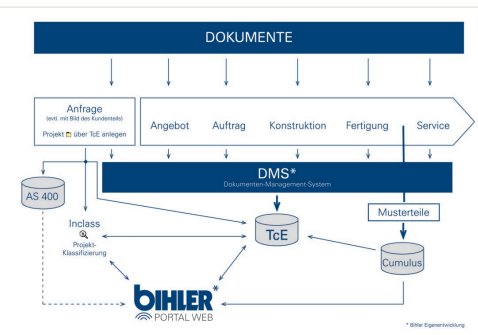


machines made by the company. NX was also chosen to become the basis for the next-generation Bihler software, which customers use for processing technical information, material data and facilities, as well as for defining products and processes for manufacturing tools.

Results

- Comprehensive user acceptance
- Significantly less time spent searching for information
- Greater knowledge leveraging for all involved in a project
- Knowledge converted into saleable products

Using Teamcenter, Bihler records database statistics, which show about 1,200 projects and 9,000 documents concerning nearly 130,000 components, standards and NC programs.



Teamcenter® software, also from Siemens PLM Software, was introduced as Bihler's product data management (PDM) system to administer and update specifications, and to control design and manufacturing workflows. The initial implementation involved approximately 70 employees in product development and an additional 16 in manufacturing. A common database at the headquarters in Halblech connects design efforts with manufacturing operations in Füssen and Halblech. Tool making at the Weissenbach plant has its own database via Teamcenter, which is periodically synchronized with the central PDM system.

"For sales and project management, we initially maintained a project file on paper, in parallel with the digital data in various systems and file structures," explains Hermann Schwarzenbach, CIO at Bihler. "Our strategic goal remained however to have a continuous and uniform system." That led to the second phase of the PLM project in which the application was extended to about 200 users. In addition to the enterprise resource planning (ERP) system on an IBM-AS400, an image database and a customer relationship management (CRM) solution, Teamcenter was

made the central source for company data, extending from sales and marketing to project management and design, preproduction, manufacturing and installation, concluding with quality assurance, training and service.

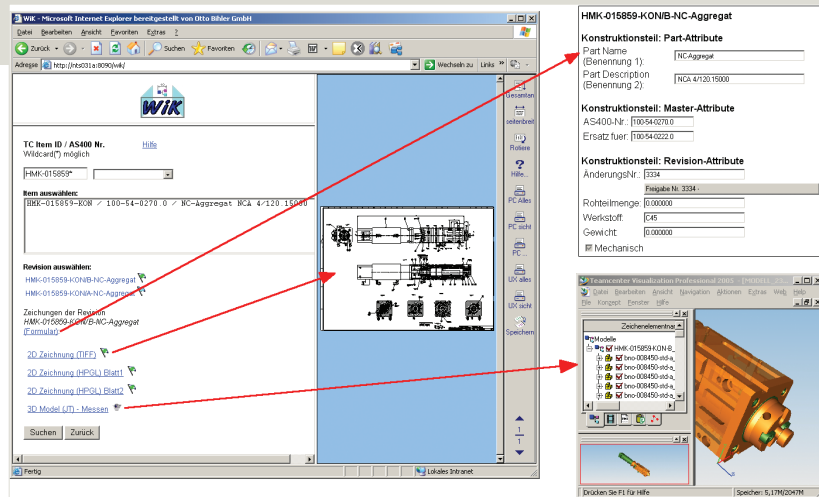
Adding project management

Teamcenter project management functionality controls the timing of all project plans in all areas. A product configuration tool, Perspectix P´X5, provides sales project management, with both the source data and results integrated with Teamcenter. A program called "Window on the World of Design" (WiK) has been developed by the information technology (IT) department. It makes all approved design and manufacturing data, including the relevant documents, available to the various user groups. The simple web-based desktop can call up a machine controller with a browser and provide access to Teamcenter information to all concerned parties. Another tool, which the engineers developed themselves, requests component data with ERP numbers in a specified format. Called "bwebExport," the program converts the data automatically and sends it as an email attachment to the requester.

To complete this range of tools, the company developed a document management capability within the Teamcenter environment. "We have our own import tools and automatic processes, and have created a detailed hierarchy of user and read-only rights encompassing all documents relevant to projects and for all parts of the company," explains Jürgen Steigenberger, who is responsible for PDM administration. Every user sees the same document. Checking out a document logs the updating process. Employees who have an interest in that document are informed of any changes that are made. All documents, drawings and component specifications covering the complete value chain are managed in this system and filed in a standard structure.

Project structure proves popular

The key to getting employees who are not involved in the design process to take advantage of PLM was the introduction of a project structure. "It is our goal to represent every order that we receive as a project," says Schwarzenbach. The project concept was found to be the major turning point in all company activities. "We begin with the first interest or query from a customer," he adds. "To start a new project, all that is needed is to fill out a project



form with basic data and initial comments. Additional details, information and documents can be added any time, and in this way subjected to the predetermined process."

All projects are managed by the document and time management processes of Teamcenter. "We have achieved a high level of acceptance in the whole company," declares Schwarzenbach. "Everyone now wants to enter product information in the new structure, including our established users in design, development and manufacturing." This software records database statistics, which show about 1,200 projects and 9,000 documents concerning nearly 130,000 components, standards and NC programs.

"Anyone without access to Teamcenter is poorly informed."

Hermann Schwarzenbach
CIO
Otto Bihler Maschinenfabrik

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Solutions/Services

Teamcenter

www.siemens.com/teamcenter

NX

www.siemens.com/nx

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

"Today we use a uniform database structure that supplies up-to-date and identical documentation to everyone involved in a project."

Jürgen Steigenberger
PDM Administrator
Otto Bihler Maschinenfabrik

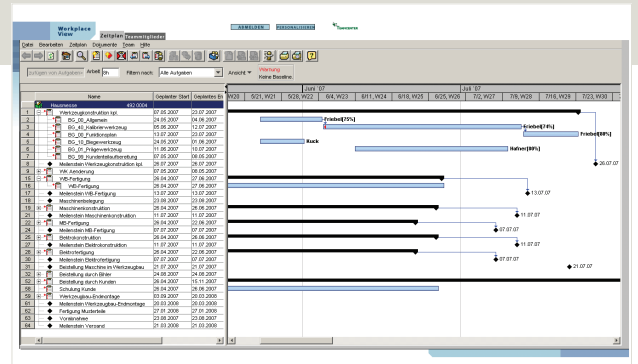
Anyone not using Teamcenter, with all of its project information, is no longer being properly informed.

Projects are identified as individual object groups using the classification capabilities of Teamcenter. Classifying at an early stage is intended to prevent the same project from being defined several times, which results in unnecessary extra work. Whoever enters a new project can search for similar ones and make a comparison with what is found, take over an existing structure, fill it out anew, and make use of it for the new concept. Additional groups higher in the classification structure include customer tool groups, standardized and normal parts, cutting tools used by Bihler, as well as visualization data for Teamcenter and the product configurator, which usually comes from NX. "With the easy handling and the extensive information in our classification system, we can effectively limit the variety of components," reports Steigenberger.

An additional tool, developed by the IT department, is Portal Web, which further increases the benefits of Bihler's comprehensive PLM implementation. This simple desktop application takes managers, marketing personnel, tool makers and

designers through all stages of the development process, giving them a view of the "Bihler World" by means of a web browser.

A user can select classification, documents, timing and parts lists, while flags show whether components are approved or not ready for assembly. Teamcenter supports this Java application, whose goal is the same as that of Google: a full text search that finds all relevant information. In this case, a user can enter a keyword or component number and find relevant product information all the way from the initial customer inquiry through to delivery, service and maintenance of the machine.



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www.siemens.com/plm

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