

CIDEON

efficient engineering.

▶ Plant engineering perfectly organized with SAP ERP/PLM



Case study: NEUMAN & ESSER GROUP

PROCESS CONSULTING

ENGINEERING SOFTWARE

IMPLEMENTATION

GLOBAL SUPPORT

FRIEDHELM LOH GROUP



Integrated SAP ERP/PLM system for shorter processing times in systems engineering



NEUMAN & ESSER GROUP (NEA)

The NEUMAN & ESSER GROUP (NEA) is a technologically leading manufacturer of piston compressors, grinding and classifying systems, and complete plants for air and technical gases. NEA products are used in a number of applications in the oil and gas sector, the chemical and petrochemical industries, the foodstuffs industry, and in the field of renewable energy.

The tradition-steeped, family corporation was founded more than 180 years ago and is headquartered near Aachen, Germany. NEA is a global player with 24 companies operating in ten countries.

NEA employs approximately 1000 people worldwide, one-third of them in the field of plant engineering.

An internal R&D division ensures the continuous development of the company's products and the fulfillment of market requirements.

The NEUMAN & ESSER GROUP (NEA) develops and manufactures piston compressors, grinding and classifying systems, and complete plants for air and gases in industrial applications. The enterprise is overhauling its IT landscape with the goal of furthering its role as a technological pioneer. The implementation of SAP ERP and SAP PLM makes expertise in plant engineering more easily accessible worldwide, accelerates order processing, and at the same time eliminates significant error potential.

Innovation has a long tradition at NEA. The beginnings of the family owned company headquartered near Aachen, Germany, can be traced back more than 180 years to the age of the (first) Industrial Revolution. Today NEA is a global player with about 1000 employees. Its core competencies include manufacturing compressors for air and technical gases. Highly qualified employees and an innovation-friendly corporate culture put NEA in a position to produce innovative products in extremely short time spans. "We are specialized in realizing exceptional applications and must therefore always be one step ahead of the state of the art," emphasizes Karl-Josef Kremers, Vice President Operations at NEUMAN & ESSER Deutschland.

NEA Compressor Technology (CT), which has around 270 employees in plant engineering, has six engineering locations in six countries around the world. Their task is to plan and design the systems engineering associated with piston compressors, to procure accessory components, and to deliver a turnkey system customized to the

customer's process requirements. "The local NEA company always takes the lead in developing the engineering for a particular system, which benefits our customers in that the purchased parts such as motors, filters, etc. conform to local standards and are well known and available in the customer's region," says Kremers.

Standardization of the IT landscape

NEA faces the same challenge as other system manufacturers, namely having to develop customer-specific solutions under significant time constraints. Constant exchange of knowledge among the NEA fosters synergy so that the wheel need only be invented once. NEA is able to reduce engineering expenses and effort by means of parts standardization for certain product components and the universal harmonization of tools, methods, and processes. "Standardizing and networking the IT landscape are the key," explains Kremers. "On the one hand, we want to disseminate expertise to the locations independent of concrete customer projects; on the other hand, the experiences and capacities of the individual centers need to be made available for projects independent of location."

In the course of harmonizing the IT landscape, NEA phased out an older ERP system—which, although it still reflected the state of the art, could no longer keep up with the growing demands of the company's structure—and rolled out SAP ERP. With assistance from CIDEON, the company simultaneously implemented the integrated SAP



Added value for NEA

Up to 85% reuse through standardization of system components and documentation

Increase in quality with standardized system documentation around the world

Reduction in sources of errors through IT networking and dissemination of cross-location expertise

Reduced processing times because data are available for the entire NEA process chain once they have been entered

More efficient order processing through standardization of IT and global data access



Compressor systems as the basis of the installation

PLM solution, with which CAD data and documents can be administered throughout the entire process. The goal of the integration is to create a tighter link between technical and logistical business processes and to shorten order-processing times. With a "single source of truth" the company will in the future benefit from greater reuse of available drawings and documents during project and budget planning for new projects.

In conjunction with the new ERP system, a new CAD software solution was sought for the international engineering offices because the manufacturer of the existing system was planning to terminate support in Europe. Following an intensive evaluation of the CAD systems for plant engineering available on the market, NEA decided on Autodesk Plant Design Suite because it best met the requirements of their specification sheet. Mike Gorgas, the project manager responsible for the introduction of SAP PLM, cited the important criteria for the decision. In addition to comprehensive 2D/3D functionality, they included the manufacturer's worldwide presence, the cost/benefit prognosis and the integration possibilities with the SAP world. Kremers adds, "But we only discovered what specific beneficial effects could arise through the integration of CAD and SAP once we started realizing projects with CIDEON."



**Thinking bigger:
Implementing SAP ERP and
SAP PLM simultaneously**

Reduced effort when implementing an integrated SAP ERP/PLM solution at once as opposed to integrating independent systems

Improved consistency between technical and business processes



A range of competencies under one roof

NEA found in CIDEON a partner for the implementation of the new CAD solution and its integration with SAP PLM—a partner that was able to offer everything under one roof. The software and consulting firm was the right choice not only because of its expertise as a specialized SAP PLM and Autodesk Platinum Partner, but also because of its extensive experience in plant engineering and its global presence, which guarantees worldwide support for NEA. "The fact that CIDEON was also able to provide the interface between Autodesk Plant Design and SAP PLM was an added advantage," says Gorgas. "That was extremely helpful to us in this project because the process-optimization specialists were intimately familiar with our requirements and were able to pass that information on to their colleagues who developed the interface."

The experts at CIDEON advised NEA on the reorganization and optimization of their business processes. In a pilot project they defined step by step how the cross-departmental collaboration and corporation-wide integration of the subsidiaries was to be designed, and supported the project team in mapping the collaboration processes in SAP PLM. Additionally, CIDEON integrated special converter technologies that allow NEA to make the plant geometry available to customers, general contractors, and operating companies in formats such as 3D-PDF, STEP, RMV (Aveva) or Intergraph.

NEA now uses SAP PLM to manage CAD data and documents in the area of plant engineering at all its locations. Although the foreign subsidiaries are largely autonomous, there were no acceptance problems during

Challenge

Standardization and harmonization of the IT landscape at NEA

Procedure

Replace the existing ERP and CAD systems and implement an integrated SAP ERP/PLM solution

CIDEON solution

CIDEON SAP PLM interface to Autodesk Plant Design Suite, integration converters for rendering the plant geometry in common formats

CIDEON services

Process consulting, implementation, customization, add-on programs, training, support

Standardization of the IT landscape and universal data availability with an SAP ERP/PLM complete solution at NEUMAN & ESSER (NEA)



Karl-Josef Kremers (right), Vice President Operations, and Mike Gorgas (left), Project Manager for the implementation of SAP PLM, NEUMAN & ESSER Deutschland



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Mike Gorgas, Project Manager for the introduction of SAP PLM, NEUMAN & ESSER Deutschland

the worldwide roll-out. As Kremers reports, "We consider ourselves to be a group and live that mindset. Over the course of the year, we have regular and unscheduled meetings and workshops in which the need for such a system was expressed and the anticipated subsequent results in order processing were formulated. It was not a decision handed down from the main office, even though it was implemented by the German company."

Worldwide roll-out of SAP PLM

Approximately 50 to 60 users currently use SAP PLM in conjunction with Autodesk Plant Design Suite, although not yet at the final level of configuration. "The software is so robust that we are implementing the roll-out module by module. The final module should be available at our international locations at the beginning of next year," says Gorgas. The users are primarily, but not exclusively, CAD designers. Employees in other departments will be trained gradually with the end result that they will also maintain their project-related information in SAP PLM and not, as in the past, in individual lists in various Microsoft products.

"That is the prerequisite to being able to trigger ordering processes in SAP or create request documents in a single step once the ERP system is linked up," says Gorgas. SAP PLM is not yet being used everywhere in plant engineering in connection with the new ERP system. The roll-out to the international engineering locations is scheduled to begin in the middle of next year. A model for integrating processes into logistics is currently being defined at NEUMAN & ESSER Deutschland; the company will then be able to implement this model at its other engineering locations with minimal adaptation. "The effort and expense associated with implementing the integrated SAP ERP/PLM solution at once are lower than for integrating independent systems, and this model guarantees significantly improved consistency between

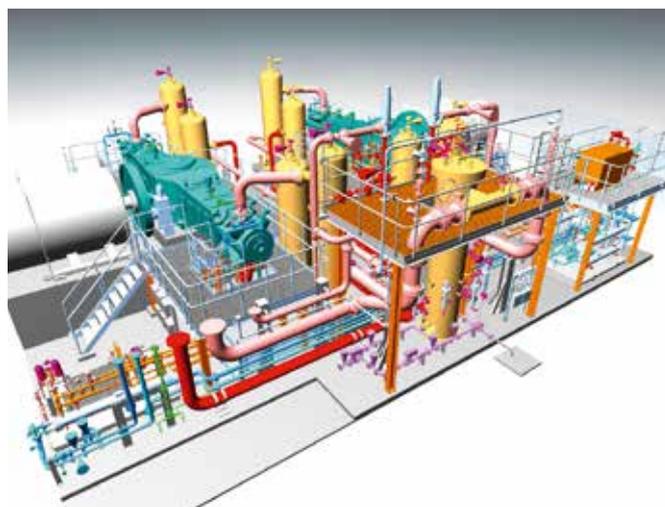


technical and business processes," according to Jan Coppel, the CIDEON project manager.

At the current level of configuration, the benefits of the consistent ERP/PLM process chain for order processing can already be seen. Kremers is confident that the data consistency will also have a positive effect on processing times: "Previously, the data for a component or assembly were captured multiple times in many process steps—from the drawing to the request, from the order to logistics and documentation—which was not only time consuming but also prone to errors. With the new system constellation we only have to enter the data once and then use them along the entire process chain. We are seeing the effects in the form of increased quality and time savings on a scale we never would have imagined."

Consistent documentation worldwide

What is already noticeable are the improved possibilities for standardization, which apply to both the system components and documentation: "We have defined specific principal functions in the individual NEA



Derivation of a complete plant from the 3D software

About CIDEON

Software and solution provider specializing in engineering processes and 360-degree support of SAP PLM applications in conjunction with CAD solutions. We have offered solutions for lean product-development processes for 25 years and develop SAP PLM direct integrations for leading CAD/CAE systems. Our extensive process and consulting know-how is the basis for SAP PLM complete solutions proven in practical application, which generate greater productivity and efficiency in our customers' product-development processes.

companies. For instance, when Brazil or India creates and releases a new component, it is stored in the system and can be immediately used by any employee in the NEA GROUP without having to be distributed," says Gorgas. The harmonization of the P&ID flowcharts using corresponding models that allow, for instance, 85% of the layout of a secondary system to be reused is already relatively far along. This not only reduces processing times but also ensures global, uniform, state-of-the-art system documentation.

Next Steps

The preparation and delivery of manuals, certificates, and other documents is currently still associated with the usual, manual effort. In this area, NEA anticipates considerable savings by integrating an output-management system into the SAP environment. CIDEON has already proposed an appropriate solution, which will be tested next year in the context of an evaluation. "Taking into consideration the resources we are using, we are implementing our vision step by step in order to ensure a solid foundation. In the end, our priority is to optimally serve the production process in every phase of the implementation," says Gorgas in closing.

CIDEON

efficient engineering.

- Process Consulting
- Engineering Software
- Implementation
- Global Support

We will be happy to advise you!

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