Case Study
Schlote GmbH & Co. KG

Implementation of an Efficient, Customer-oriented Quality Assurance System
The SCHLOTE GROUP is a conglomerate of associated manufacturing companies that specialise in the various facets of the automotive supplier industry. In addition to mechanical product engineering and the assembly of ready-to-install components, the Group’s scope of services also extends to the construction and manufacture of die-casting moulds, tools and fixtures.

The Group, which comprises 7 companies, employs a combined workforce of 1,100. The overall site space covers an area of 92,000m².

Schlote GmbH & Co. KG, with its Harsum location (near Hildesheim), is a development partner and series supplier of the automotive and automotive supplier industry, foundry technology and mechanical engineering. The company, which was founded in 1969, currently employs a workforce of 260, with which it manufactures products within the scope of small, medium and high-volume production.

Schlote GmbH & Co. KG specialises in the processing of workpieces made from a wide variety of materials using the latest technologies and boasts comprehensive know-how in these areas. This special knowledge is reflected in the company’s complex production islands and lines. Manufacturing activities focus on cast and forged products. Increasing importance is given to automated work processes, including integrated assembly processes. A high degree of automation ensures the customer receives the optimal quality standard with the respective process capability.

Initial Situation

Prior to the use of a computer-assisted quality management system, the Schlote Group was using a heterogeneous IT environment in its shop floor area, along with a whole host of stand-alone solutions subject to a relatively high error rate due to the manual and unstructured creation and modification of documents. No universal standard came into play at Schlote. Each plant/location was responsible for its own organisation.

As a consequence:

- No inherited data, documents, knowledge or follow-up/new projects
- No controlled deadline monitoring
- No actions monitoring
- No evaluation possibilities
- Unstable, non-transparent processes

A large number of standards, methods and systems also needed to be observed and applied on a day-to-day basis. Compliance with standards such as ISO 9000, ISO 14001, TS 16949/AIAG and QS900, and the application of Risk Management, CIP and SPC was almost impossible on a manual basis.

This situation prompted the company’s decision-makers to opt for the implementation of an efficient, customer-oriented quality assurance system.

Expectations and Selection Process

The use of a CAQ system was aimed at optimising all phases of the product life cycle and bringing comprehensive transparency and stability to all quality processes. The centralised and fully-integrated administration of data supports the creation of a Schlote standard and the use of universal methodology across all plants.

The shortlist comprised 3 suppliers. Following a reference visit and comparison of the functionalities and costs, the company opted for IBS AG’s quality management solution CAQ=QSYS.

The IBS software solution, with the greatest application potential, embodied the optimal CAQ system for the organisational structures at Schlote. This was one of the principal reasons for the decision. The decision also favoured a high degree of homogeneity with customers and suppliers alike, such as BMW, BorgWarner, Georg Fischer etc., who also rely on the IBS solution. IBS AG also possesses a certified interface with the ERP system in use.
Implementation

Following the conclusion of the necessary project preparations and resource planning, both test and productive systems were installed at the company’s Harsum site. Users of the test system then attended a basic training course. In parallel, preparation was also carried out for the switch to the productive system, such as the set-up of an interface with the ERP system and further training for system users. The go-live of the productive system, was followed by a roll-out and successful project implementation at further sites.

Five of the company’s production plants use the IBS AG quality management system today.

The following modules are in use:

**APQP Project Management**

The IBS project management solution supports all aspects of the product development process, across all areas of the company. The project management tool maps not only internal project work, but also the customer and supplier points of view. This also enables the administration of complex projects for new developments and change projects. Templates reduce the administration effort. The core focus is actions management, aimed at ensuring adherence to deadlines and due dates and recognising likely project postponements at an early stage and thus taking action to avoid them. The Project Management module is linked to the Advanced Product Quality Planning module online to ensure that all data remains up-to-the-minute.

Enormous potential can be seen at Schlote, when it comes to APQP. Whereas MS Project was used prior to implementation, the centralised planning department has been working with APQP since mid 2013.

**Advanced Product Quality Planning with FMEA**

The FMEA module (Failure Mode and Effect Analysis) enables the creation of process FMEAs using a systematic procedure in the field of process development.

The IBS solution facilitates the definition of system elements, their functions and failures and the creation of links for the verification of failure consequences and causes and to induce their avoidance or discovery with actions to be initiated. The solution is rounded off by a graphical visualisation function, risk analysis and a comprehensive range of evaluations.

Integration in further modules, along with a common database, ensures a standardised, comprehensive use of the information. The enables efficient searches and the compilation of a knowledge database.
The FMEA module also assists in the prevention of product defects and process errors. Use of the module also supports the further process steps, from the analysis of quality risks to the initiation and execution of corrective actions by the system.

**Inspection Plan Management**

The Inspection Plan Management module is a core element of the IBS quality management solution. The inspection criteria for all quality-related company activities are defined here in conjunction with the Control Plan, in order to ensure product and process quality.

This is of great benefit to Schlote, since the recording and storage of data is no longer necessary in paper format and the captured data is available for further processing.

**In-process Production Testing (SPC)**

The in-process production test enables the early identification of production disruptions and the cause thereof. This ensures optimal production process control.

Within the scope of the inspection, the respective inspection plan links the production order with the corresponding inspection order, matching these against the product, production unit or production line.

At Schlote, the acquisition of measured values is carried out at Zeiss KMG and SPC inspection stations. All documents associated with the inspection plan can also be accessed online at this point. A user-friendly system interface and the optional automatic transfer of gage and measuring device data reduces inspection time and costs, as well as erroneous data input.

**Incoming Goods Inspection**

The Incoming Goods Control module supports the quality monitoring of purchased products and parts. The inspections are attained from random sampling tables and dynamic sampling procedures. These results are then used as a basis for the supplier assessment. The earlier detection of defects enables the minimization of costs and effort whilst also improving effectiveness.

Unlike most other companies, Schlote uses two monitors at its incoming goods workstations. The first monitor displays the inspection in progress and the second visualises the packing instructions.

**Supplier Management**

Product quality, deadline and quantity reliability are variable criteria incorporated in the supplier comparison feature of the SAM (Supplier Assessment Management) module. These criteria may vary with each delivery. An individually configurable evaluation matrix enables the weighting of the criteria that remain valid for a longer period of time and a specific period, such as audit results, service behaviour, price, location, etc. The inspection results from the acquisition carried out within the scope of the incoming goods inspection are used as a basis for the objective data, which is required for supplier
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Interface with the ERP System
Integration capability in superordinate management systems is a key requirement of quality management. With its standardised ERP system interface, IBS offers a solution for the avoidance of data redundancy, for the exchange of all relevant order data and for an uninterrupted flow of information.

At Schlote, the acquisition of incoming/outgoing goods data is effected using the CAQ system. Following the inspection decision, the data and results are automatically returned to the ERP system via the interface.

Benefits
Use of the quality management system has enabled Schlote to achieve considerable cost-savings in the product development and manufacturing processes, as well as in the product acceptance and test phase. Savings include rework and inspection, reject, guarantee and goodwill costs.

Concern and Complaint Management
As a part of the IBS CAQ software, the concern and complaint management tool effectively supports structures procedures prescribing the handling of concerns and complaints. The integrated, detailed documentation, track and trace and analysis options all carry significant cost-saving potentials. A wide range of evaluation options enable the rapid and efficient identification of weaknesses and the initiation of the respective countermeasures. Additional use of the Workflow Manager also helps optimise the company-wide flow of information. This prevents duplicate work and increases production process transparency.

In future, the acquisition and documentation of complaints and complaint handling at Schlote will be enhanced by the acquisition and evaluation of complaint costs. The structure of the various procedures will also be further optimised as each plant currently still has a different organisation.

Actions Management
The module enables the central administration of all quality-relevant actions, e.g. the planning and control of complaint actions, statistic process control or the incoming goods inspection. This provides automated monitoring and the provision of all the important information relevant to scheduled quality actions on a company-wide basis are shown at a glance.

Actions management is an important tool at Schlote, and is used in all plants. The acquisition and tracking of actions is carried out on a theme-specific, cross-area, action-oriented basis. Deadline exceedance is reported to the respective individual, without delay, rendering overlooked actions a thing of the past.

assessment. The supplier assessment function takes all criteria, which can also be individually weighted, and aggregates them in the form of an overall evaluation.
The System Solution at a Glance

Industry:
Automotive Industry Supplier

Project:
Introduction of a CAQ system

Products and modules in use:
CAQ=QSYS Professional with the modules: IPM, SPC, IGC, SAM, APQP, FMEA, CCM and QAM

Motivation and success factors for use of the IBS software solution at Schlote GmbH & Co. KG

- Homogeneous software landscape
- Reliable compliance with standards in the field of quality management
- Improved information and communication speed
- Knowledge transfer within the corporate group
- Transparency of the latest quality events
- Synchronous processes at all sites
- Customer satisfaction assurance
- Key user structure on individual plant level, to assist users on an on-site basis in case of query and with internal training courses

The Future

Schlote is currently in the process of building a new plant in China (Tianjin). Construction of the site is scheduled for completion in 2015, following which operation will commence. In this context, a roll-out of the CAQ system in China is also planned.

Existing installations will also be further optimised in order to increase transparency and cost-savings.

The establishment of Key Users on individual plant level will support system users and the expansion of the system on site.

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Services

Schlote GmbH & Co. KG specialises in the processing of workpieces made from a wide variety of materials using the latest technologies and boasts comprehensive know-how in these areas. This special knowledge is reflected in the company’s complex production islands and lines today. Manufacturing activities focus on cast and forged products. We attach increasing importance to automated work processes, including integrated assembly processes. A high degree of automation ensures that our customers receive the optimal quality standard with the respective process capability.

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